

MINERALOGICAL ABSTRACTS

Volume 19 - Index

Editor

R. A. HOWIE

Indexer and Assistant Editor

O. BRADLEY

PUBLISHED JOINTLY BY

THE MINERALOGICAL SOCIETY OF GREAT BRITAIN AND THE MINERALOGICAL SOCIETY OF AMERICA
LONDON - 1969

MINERALOGICAL ABSTRACTS

COMMITTEE OF MANAGEMENT

Mineralogical Society of Great Britain

PROF. W. A. DEER, *Chairman*

DR. A. C. BISHOP, *Secretary*

DR. A. A. MOSS, *Treasurer*

DR. M. H. HEY

MR. B. R. YOUNG, *Publications Manager*

Mineralogical Society of America

DR. J. B. THOMPSON, *President*

DR. R. J. HOLMES, *Secretary*

MISS MARJORIE HOOGER, *Treasurer*

DR. C. S. HURLBUT, *Jr.*

DR. HORACE WINCHELL

DR. W. T. HOLSER

AUTHOR INDEX

to *Mineralogical Abstracts*, vol. 19. Names of AUTHORS are printed in small capitals. Subjects in lower-case roman, and localities in italics.

ABAKIROV, SH. A. *v.* IL'IN, N. P., 56;
SHCHERBINA, V. V., 198

ABAKUMOVA, K. M., GURENKOVA, G. V.,
KREMNEVA, V. M., MAKHENZON, M. R.,
MIRGORODSKAIA, N. K., & PETROVA, V. P.,
Clay minerals, *Ob-Irtysch*, 91

ABBOTT, D. & FERGUSON, J., Basic intrusion,
Transvaal, 235

ABBOTT, M. J., Aenigmatite, *New South
Wales*, 218

ABDEL-MONEIM, A. & GAST, P. W., Age of
volcanism, *St. Helena*, 168

ABDULLAH, M. I., Determination of Mn, 171

ABDULLAYEV, Z. B. *v.* EFENDIYEV, G. K., 200

ABE, M., Vivianite, *Niigata*, (I), 163

ABELEDO, M. E. J. *de*, ANGELELLI, V.,
BENYACAR, M. A. R. *de*, & CORDILLO, C.,
Sanjuanite, *Argentina*, 314

ABELSON, P. H., Geochemistry, (book), 87
Formation of kerogen, paraffins, 87

ABRAMOVA, L. S., Analysis by, 268

ABS-WURMBACH, H. *v.* NEUHAUS, A., 305

ACADEMIA SINICA, Age of rocks, *China*, 81

ACHAR, B. N. N. *v.* BRINDLEY, G. W., 289

ACKERMANN, H. *v.* HAHN-WEINHEIMER,
114

ADAM, D. P., Multinomial correlation
coefficient, 258

ADAM, J. W. H., Sn ores, *Billiton island*, 276

ADAMS, H. F. & KELLAWAY, G. F., Coal in
borehole, *Bristol*, 154

ADAMS, J. A. S. *v.* BEST, M. G., 330; FAHRIG,
W. F., 115

ADAMS, J. B., Lunar surface composition, 253
& FILICE, A. L., Reflectance of silicate
rock powders, 251

ADAMS, P. J., Recent lunar research, 339

ADDISON, W. E. & SHARP, J. H., Amosite,
288

& WHITE, A. D., Lithium in riebeckite,
135

Oxidation of crocidolite, *Bolivia*, 195

ADLER, J. E. M. *v.* SALISBURY, J. W., 80

ADYSHEV, M. M., Metal-bearing metashales,
Tien-Shan, 97

& KALMURZAYEV, K. E., Mo in sedimentary
rocks, *Tien-Shan*, 202

AFANAS'EV, A. P., Weathering, *Kola peninsula*, 92

AFANAS'EV, I. I. & MOKIEVSKI, V. A., Plastic
deformation of halite, 75

AFIA, M. S. *v.* WAHAB, O. A., 21

AGARD, J., Be in ores, *Morocco & Algeria*,
277

AGGARWAL, K. G., Lattice dynamics of
diamond, 182

AGIORGITIS, G., Trace elements in basaltic
rocks, *Europe*, 292

AGNITHOTI, S. K. *v.* PAMANI, K., 85

AGRINIER, H. & GEFFROY, J., Se minerals,
Puy-de-Dôme, 140

& RAOUL, F., Se & selenides in pitch-blende,
Puy-de-Dôme, 139

AGTERBURG, F. P., Multivariate Markov
schemes, 34

AHMAN, E., Kimberlite in sedimentary rocks,
Sweden, 246

AHRENS, L. H., CHERRY, R. D., & ERLANK,
A. J., Th/U in zircons, 132

— WILLIS, J. P., & OOSTHUIZEN, C. O.,
Composition of Mn nodules, 117

— *v.* BURGER, A. J., 167

AHRENS, T. J. & SYONO, Y., Reactions in
mantle, 194

AIRÉS-BARROS, L. & PAULA SANTOS, J.,
'Granitic breccia', *Serra da Estrela*, 152

AITCIN, P.-C. & MASO, J.-C., Slag sand
grains, 108

AKAYEV, B. A. *v.* NERUCHEV, S. G., 203

AKELLA, J. *v.* MATSUSHIMA, S., 28

AKERS, L. K. *v.* NOAKES, J. E., 201

AKHMANOVA, M. V. & ORLOVA, L. P., Rare-
earth carbonates, 16

AKIMOTO, S. & IDA, Y., Synthetic spinel, 286

— *v.* KUSHIRO, J., 195

AKIMOTO, S.-I. & FUJISAWA, H., System
 Mg_2SiO_4 — Fe_2SiO_4 , 194

AKIZUKI, M., Liquid inclusions in fluorite,
United States, 144

— Dislocations in galena, *Yamagata &
Miyagi*, 160

— Talc, chlorite, & muscovite transforma-
tions, 288

ALBANESE, J. S., Chlorophoenicite, *New
Jersey*, 338

AL'BATS, B. S. *v.* TIMASHEV, V. V., 9

ALBEE, A. L. *v.* SHERIDAN, D. M., 101

ALCARAZ, A. *v.* MOORE, J. G., 239

ALCOCK, C. B. & IYENGAR, G. N. K.,
Magnesio-wüstites, 25

— ZADOR, S. & STEELE, B. C. H., Rutile
structures, 24

ALCOCK, N. W. & SHELDICK, G. M.,
Determination of unit-cell dimensions, 265

ALEKSANDROV, S. M. *v.* BROVKIN, A. A., 128

ALEKSEYEV, V. A., IVANOV, I. K., KIND,
N. V., & CHERNVSH, A. P., Palaeolithic
encampment, *Dniester*, 82

ALEKSIĆ, V. *v.* DIMITRIJEVIĆ, M., 333

ALÉONARD, S. & LE FUR, Y., Langbeinite
structures, 17

ALEVA, G. J. J., Plutonic igneous rocks,
Indonesia, 322

ALEXANDER, E. *v.* BRAFMAN, O., 181;
MARDIX, S., 181

ALEXANDER, E. C. *v.* CANALAS, R. A., 289

ALEXANDER, E. C., Jr. & MANUEL, O. K.,
Rare-gas isotopes in graphite, 301

ALEXANDRE FERRANDIS, V. & GONZALEZ
PEÑA, J. M., Serpentinites, *Spain*, 111

ALEXANDR, C., MOREL, P., & LE BOUFFANT,
L., Infrared spectra of minerals, 58

ALEXIADES, C. A. & JACKSON, M. L.,
Determination of chlorite, 262

ALIETTI, A. & GALLI, E., Alteration products
of basalt, pyroclastics, *Vicenza*, 231

— PASSAGLIA, E., & SCAINI, G., Ferrierite,
Italy, 139

— Analysis by, 179

ALIMOVA, I. A., BOLTENKOV, B. S., GART-
MANOV, V. N., MAMYRIN, B. A., &
SHUSTROV, B. N., Determination of He, 5

ALIYEV, A. G., ALIYEVA, G. A., & OSIKA,
D. G., Rock solutions & stratal water,
Dagestan, 205

— & PIRBUGADOV, V. M., Organic carbon in
sediments, *Dagestan*, 116

ALIYEV, R. M., Cubic magnetite, *Dashkesan*,
141

ALIYEVA, G. A. *v.* ALIYEV, A. G., 205

ALKHAZOV, V. YU. *v.* DUDMATOV, V. D., 226

ALLÉGRE, C. & DARS, R., Sr/Rb in granites,
Anti-Atlas mts. & Montagne-Noire, 1

ALLEN, G. C., Riebeckite, *Virginia*, 79

ALLEN, R. V. *v.* ARONSON, J. R., 80

ALLISON, L. A., Minerals, *North Carolina*, 79

ALMOND, D. C., Sn-W mineralization, *Sudan*,
18

AL'MUKHAMEDOV, A. I., Ti in magma
differentiation, 229

— *v.* NESTERENKO, G. V., 46

ALONSO, J. J. *v.* GALVAN, J., 154

ALONSO PASCUAL, J. *v.* GALVÁN GARCIA, J.,
162

ALPERN, B. & PREGERMAIN, S., Fine
micritite, 240

— *v.* ORCEL, J., 300

AL-RAWI, Y. & CARMICHAEL, I. S. E., Fusion
of granite, *California*, 329

ALTUNIN, V. V. *v.* VUKALOVICH, M. P., 283

AMANO, T. *v.* DAIMON, N., 110

AMBS, H., Deformation of minerals, 250

— *v.* PAULITSCH, P., 62

AMIEL, S., GILAT, J., & HEYMANN, D.,
Uranium in chondrites, 43

AMIGO, J. M. *v.* FONT-ALTABA, M., 22

AMIN, M. *v.* JAWAID, M., 90

AMOROS, J. L., Cleavage features, 75

AMSHINSKIY, N. N. *v.* DOLGUSHIN, S. S., 36

AMSTUTZ, G. C. *v.* WEISS, A., 275

ANASTASENKO, G. F., Datolite, prehnite,
apophyllite, *Kureyka basin*, 133

— Globular lavas, *Siberia*, 157

— MITROSHIN, M. I., & SUKHOV, L. G.,
Differentiated intrusion, *Khuperi mt.*, 150

— *v.* BULAKH, G., 224

ANDERS, E. *v.* BARKER, J. L., 293;
HAYATSU, R., 213; HEYMANN, D., 209;
LARIMER, J. W., 120; MAZOR, E., 122;
STUDIER, M. H., 212

ANDERSEN, H. *v.* ANGINO, E. E., 204

ANDERSON, A. T., Oxygen equilibrium during
metamorphism, 296

ANDERSON, B. W., Blue zoisite, *Tanzania*,
196

— Dispersion in diamond, 196

ANDERSON, D. M., Ice nucleation, 190

ANDERSON, G. M. & BURNHAM, C. W.,
Solubilities of quartz, corundum, 28

ANDERSON, O. L. *v.* SOGA, N., 214

ANDO, T. *v.* FUNASAKA, W., 86

ANDREWS-JONES, D. A., Schist belt &
granulites, *Sierra Leone*, 234

ANDREYEV, G. V., Magnesian skarn, *Synnyr*,
330

ANDRIEYeva, E. D. *v.* PETERSIL'YE, I. A., 298

ANDRIEVSKAYA, N. F., KRUGLOVA, A. A., &
SHCHIPANOV, O. V., Infrared spectra of
Ca phosphates, 224

ANDRUSENKO, N. I. & MOSKALYUK, A. A.,
Hydrothermal treatment of dolerites, 107

ANFILOV, V. N., UDODOV, YU. N., &
CHERNYSHEV, L. V., Check of geothermo-
meter, 26

ANGEL, F. & LASKOVIC, F., Enstatite,
Styria, 232

ANGEL, G. P., Age of biotites, *Colombia*, 256

ANGELELLI, V. & RINALDI, C. A., Li-bearing pegmatites, *Argentina*, 281

— v. ABELEDO, M. E. J. DE, 314

ANGELL, G. R. & PRICE, N. B., Determination of minor elements, 259

ANGINO, E. E. & BILLINGS, G. K., Atomic absorption spectroscopy, (book), 88

— & ANDERSEN, H., Strontium in seawater, *Atlantic & Caribbean*, 204

ANIKEYEVA, N. F., Accessory apatite, *Karakalinsk*, 7

— Alaskite granite, *Kirgiz range*, 321

ANIKINA, L. I., DOBROLYUBSKAYA, T. S., & KARYAKIN, A. V., Luminescence of sodalite, 251

ANNELL, C. v. CHAPMAN, D. R., 214

ANNELL, C. S. v. CUTTITTA, F., 214

ANON., Tonsteins in coals, *Queensland*, 11

— Non-metallic minerals, (2), 22

— Siderite, pyrite in coals, *Australia*, 71

— Faceted taaffeite, *Ceylon*, 196

— Petalite, 281

ANOSHIN, G. N. & POTAP'YEV, V. V., Au in granites, *Altai & Transbaikal*, 35

— v. PESCHCHEVITSKII, B. I., 118

ANSILWEWSKI, J., Muscovite, garnet in quartzite, *Sudetes*, 49

ANTHONY, A.-M. & LOC, V., Monoclinic zircon, 105

ANTIĆ-JOVANOVIĆ, A. M. v. MARINKOVIĆ, M. D., 4

ANTONIĆEVIC, I. v. KARAMATA, S., 319

ANTONOV, A. A., Transportation in groundwaters, *Kola peninsula*, 119

ANTUN, P., Sedimentary pyrite, *Oslo*, 57

AOKI, K.-I., Sanidine, *Wakayama*, 137

— Inclusions in alkali basalts, *Japan*, 322

— v. McBIRNEY, A., 46

AOKI, M. & YONEMITSU, K., Dehydration of kaolin minerals, 90

AOKI, Y. & SHIMODA, N., Margarite, *Oita*, 137

ONO, C. v. SAWAMURA, T., 140

APLONOV, V. S. & PETROVA, N. V., Rare-earth minerals, *Verkhoyansk*, 143

APPELT, W. v. KRECI-GRAF, K., 296

APPLEMAN, D. v. MILTON, C., 127

APPLEMAN, D. E. v. TAKEDA, H., 270

APRASHAMIAN, J., Gneiss, *Salette mts.*, 157

— & GIBERG, P., Ignimbrite debris, *Isère*, 328

APTE, B. G. v. DESHMUKH, K. K., 258

ARAD, A. v. GOLDSCHMIDT, M. J., 297

ARAKELYAN, O. I. & PAVLOV, YU. I., Hydro-aluminosilicates, 8

ARAKI, T. & ZOLTAI, T., Glauberite, *California*, 181

ARAKAMI, S., Granite porphyry complex, *Japan*, 151

— Plagioclase, *Hawaii*, 151

— & HARAMURA, H., Leaching from volcanic glasses, 110

— v. LIPMAN, P. W., 69

ARANITIS, S., Hydrothermal sericitization, *Pyrenees*, 156

ARENDE, H. & COUFOVÁ, P., BaTiO_3 single crystals, 104

ARISTARAIN, L. F. & HURLBUT, C. S., Jr., Macallisterite, *Argentina*, 313

ARKHPOVA, A. I. & DODIN, D. A., Sub-alkaline trap magmatism, *Siberia*, 150

ARLETT, R. H. & ROBBINS, M., MgAl_2O_4 single crystals, 191

ARMING, H. & PREISINGER, A., Gaseous inclusions in minerals, 260

ARNAUDOV, V. & PETRUSENKO, S., Accessory minerals in pegmatite, *Rhodopes*, 144

— v. IVANOV, I. M., 273

ARNOLD, J. R. v. BHANDARI, N., 302

ARONSON, J. L., Regional geochronology, *New Zealand*, 256

ARONSON, J. R., EMSLIE, A. G., ALLEN, R. V., & McLINDEN, H. G., Spectra of mineral surfaces, 80

ARRESE, F., MORANTE, N., & RODRIGUEZ, J., Epitaxy of muscovite, 161

— v. RODRIGUEZ, J., 160

ARRIBAS, A., Coffinite, *Spain*, 304

ARSHAKUNI, R. G., Determination of Si isotopes, 172

ARSICIAULT, G., Silicified wood, *Morocco*, 164

ARTAMONOV, V. S., Semi-precious stones, *Russian SFSR*, 196

ARTEMOV, YU. M., KNORRE, K. G., STRIZHOV, V. P., & USTINOV, V. I., Isotopes in calcareous rocks, *Caucasus*, 202

— v. MILLER, Y. M., 38

ARUTYUNYAN, L. A., Mo in S-bearing solutions, 26

— v. KHITAROV, N. I., 193

ARUTYUNYAN, T. M. v. KAZARYAN, A. G., 142

ASHBEE, K. H. G. v. BAETA, R. D., 335

ASHIDA, S. & ONUKI, H., Garnet, *Kyoto*, 132

ASHIKHMINA, N. A., MAGIDOVICH, T. S., & MORKOVKINA, V. F., Accessory minerals of gabbro-peridotite, *Urals*, 7

— v. BRAUN, K. N., 7; RUB, M. G., 7

ASHKINADZE, G. SH. v. GERLING, E. K., 167; SHUKOLYUKOV, YU. A., 41

ASTAKHOVA, M. A. v. SYCHEV, M. M., 8

ATAMAN, G., Boron, gallium in sediments, *Jura*, 202

ATFEH, M. S., Phosphate deposits, *Syria & Egypt*, 188

ATWOOD, D. K. & FRY, H. M., Strontium, manganese in calcites & dolomites, *Michigan basin*, 142

— v. BABCOCK, R. S., 84

AUBERT, G., AUTRAN, A., & BURNOL, L., Albite, *Beauvoir*, 148

AUCOTT, J. & CLARKE, R. H., Amino acids in bitumen, *Leicester*, 199

AUFFRET, G. v. BERTHOIS, L., 257

AUGUSTITHIS, A. A., Accessory minerals of granite, *Ethiopia*, 68

AUGUSTITHIS, S. S., Differential leaching, 200

AUMENTO, F., Serpentine mineral, *New York*, 135

— & FRIEDLANDER, C., Zeolites, *Nova Scotia*, 52

AUSTRIA, V., Jr. v. GOVETT, G. J. S., 298

AUTRAN, A. v. AUBERT, G., 148

AVER'YANOV, I. P., Volcanic S deposits, *Kuriles & Kamchatka*, 240

AVNIMELECH, Y., Isotope exchange of hydroxyapatite, 284

AXON, H. J., Gibeon meteorite, 43

— Kodaiakanal meteorite, 124

— Metallurgy of meteorites, (book), 172

— & FALKNER, D., Hot-working effects in Fe meteorites, 124

AXON, H. & BOUSTEAD, J., Kamacite-taenite interfaces in meteorites, 211

AZER, N., Precambrian ores, *Egypt*, 183

AZEVEDO, J. DE v. WILLIAMS, S. A., 144

BAAR, C. A., Bromine in salt deposits, 39

BABAYAN, S. A., Orthosilicates of Ni, Yb, 7

BABAYEVA, E. E. v. EFENDIYEV, G. K., 200

BABCOCK, R. S., ATWOOD, D. K., & PERRY, D., Separation of dolomite, 84

BABKIN, P. V., Formation of Hg ores, *Koryak*, 100

— & DRABKIN, I. E., Mercury ores, *USSR*, 100

BABKINE, J., BOLFA, J., REITHLER, J. C., & ZELLER, C., Magnetic susceptibilities of pyroxenes, amphiboles, 252

BABOVIĆ, M. v. DIMITRIJEVIĆ, M., 333

BÄCHTIGER, K., Thermoluminescence of plagioclases, *Scandinavia & N. America*, 76

— Pillow lavas, *Felsberg*, 231

— Au-calcite veins, *Switzerland*, 337

BACMANN, M. & BERTAUT, E. F., UFeO_4 , 16

BADAK, J. & GUCWA, I., Menilite formations, *Carpathians*, 117

BADALOV, S. T. & RABINOVICH, A. V., Geochemistry of In, Tl, *Uzbek & Tadzhik SSRs*, 199

— & TURESEBEKOC, A., Pyrrhotite, *Uzbek SSR*, 99

BADOUX, H., Rock-salt mine, *Rhône valley*, 188

BAEDECKER, P. A. & EHMMANN, W. D., Noble metals in meteorites, 43

BAER, W. S., Perovskite oxides, rutile, 14

BAËTA, R. D. & ASHBE, K. H. G., Deformation of quartz, 335

BAGDASARIAN, G. P. & GUKASIAN, R. KH., Age of magmatic rocks, *Siberia*, 82

BAHL, O. P. v. PATEL, A. R., 28, 335

BAILEY, D. K., Carbonatite, kimberlite, 30

BAILEY, E. H. v. WOLLENBERG, H. A., 251

BAILEY, S. W. v. EGGLESTON, R. A., 14

— LISTER, J. S., 268

BAIRD, A. K. & HENKE, B. L., Determination of O, 86

BAJOR, M. & WEIDE, B. M. VAN DER, Amino acids in sediments, 37

BAKER, G., Possible origin of microtekites, 302

BAKER, J. H., BEETEM, W. A., & WAHLBERG, J. S., Adsorption equilibria, *Alaska*, 112

BAKSI, A. K., YORK, D., & WATKINS, N. D., Age of basalt, *Oregon*, 168

BAKUMENKO, I. T. & LYSAKOV, V. S., Thermoluminescence of quartz, 336

BALAKSHIN, G. D., Diamond prospecting, *Yakutia*, 102

BALASHOV, YU. A., DORFMAN, M. D., & TURANSKAIA, N. V., Weathering of eudialyte, *Khibiny & Lovozero*, 116

— & NESTERENKO, G. V., Rare-earths in trap rocks, *Siberia*, 35

— & SHARAS'KIN, A. YA., Rare-earth composition as evolution indicator, 197

— v. GERASIMOVSKY, V. I., 6; RONOV, A. B., 201; SEMENOV, E. I., 304

BALÁZS, J. v. SZÁNTÓ, F., 176

BALDOCK, J. W., Calcirtite in residual soils, *Uganda*, 224

BALDWIN, A. B. & GROSS, W. H., Origin of hematite, *Fort Gouraud*, 279

— Reply to discussion, 279

BALITSKII, V. S., SAMOLOVITCH, M. I., NOVOZHILOV, A. I., & STUPAKOV, G. P., Crystallization temperatures of quartz, *Kazakhstan*, 138

BALL, T. K., GUNN, C. B., HOOVER, P. R., & LEWIS, D., Geological survey, *Finnmark*, 146

BALOGH, K. v. PANTÓ, G., 256

BAMBAUER, H. U., CORLETT, M., EBERHARD, E., & VISWANATHAN, K., Plagioclases, (III), 52

— EBERHARD, E., & VISWANATHAN, K., Plagioclases, (IV), 52

BANCROFT, G. M. & BURNS, R. G., Fe in pyroxenes, 93

— Mössbauer spectra of Fe silicates, 266

— & MADDOCK, A. G., Fe in neptunitite, 180

— & STONE, A. J., Mössbauer effect in silicates, (II), 177

— MADDOCK, A. G., & BURNS, R. G., Mössbauer effect in silicates, (I), 177

— Brick-making, *India*, 263
— O'REILLY, W., GIBB, T. C., & GREENWOOD, N. N., Fe-Ti spinels, 76
BANFIELD, J. & SEAGER, A. F., Crystal growth of galena, 334
BANIN, A., Ion exchange of montmorillonite, 174
BANKS, E. v. GREENBLATT, M., 271
BANKWITZ, P., Motion of intrusive rocks, 229
BANNERMAN, H. M., Society of Economic Geologists, 96
BANNO, S., Pyralspite, *Beasi*, 132
— Alumina in orthopyroxene, 134
— Paragenesis of eclogitic rocks, 330
— & GREEN, D. H., Eclogites, 287
— & KANEHIRA, K., Awaruite, *Shikoku*, 163
— v. KANEHIRA, K., 141, 163; MATSUI, Y., 112; SHIMIZU, N., 136
BARADAT, J. v. KULBICKI, G., 172
BARANOV, E. N., Uranium in fluorite, 56
BARANOV, YU. N., Crystal weathering, *Urals*, 164
BARANOVSKII, S. N. v. GODOVIKOV, A. A., 251
BARBANYAGRE, V. D. v. LUGININA, I. G., 9
BARBOSA, A. L. M., Age of Precambrian rocks, *Brazil*, 166
BARBU, I. Z. v. VINOGRADOV, C., 187
BARD, J.-P., Pillow-lavas, *Spain*, 237
BARDOSY, G., Diffractograms of amorphous rocks, 84
BARDYUK, V. V. v. IVASHOV, P. V., 206
BARIAND, P., LE BIHAN, M. T., & GILLET, Y., Cuprosklodowskite, *Katanga*, 54
BARKER, J. L. Jr. & ANDERS, E., Accretion rate of cosmic matter, *Pacific Ocean*, 293
BARNA, J., Aqueous dispersions of clay minerals, 176
BARNARD, W. M. v. METZGER, W. J., 192
BARNES, H. L., Hydrothermal ore deposits, (book), 88
BARNICKI, H., Interpretation of fabric diagrams, 324
BARON, G., Synthesis of dolomite, 192
BARR, K. G. v. ROBSON, G. R., 339
BARRÈRE, J., Metamorphism & migmatization, *Mauritania*, 45
BARRON, T. H. K. & MUNN, R. W., Heat capacities, 250
BARROS, R. F., Uranium minerals, *Senhora das Fontes*, 101
BARSUKOV, V. L. & KURIL'CHIKOVA, G. E., Tin transport, 20
— v. SUSHCHEVSKAYA, T. M., 20
BARTA, Č. v. KVAPIL, J., 104
BARTENSTEIN, H., Reef formations, *England*, 189
BARTH, T. F. W., Alkali feldspar mixed crystals, 14
— v. SMITHSON, S. B., 331
BARTHOLOMÉ, P., Formation of dolomite, 224
— & DIMANCHE, F., Ilvaite in skarns, *Italy*, 216
— DUCHESNE, J. C., & PLAS, L. VAN DER, Monoclinic ilvaite, *Italy*, 268
BARTOSHINSKII, Z. V., Etched diamonds, *Yakutia*, 335
BARTURA, J. & BODENHEIMER, W., Determination of Al, 170
BARZON, G. P., MAZZUOLI, R., PAGGI, A., & SCHIAFFINO, L., Caesium sorption on clays, *Italy*, 11
BASHKIROV, A. N. v. PIROVSKII, YU. I., 295
BASS, M. N. v. MCBIRNEY, A., 46
SHIMKUS, K. M., Metals in sediments, *Black & Mediterranean Seas*, 201
BATYREV, V. A. v. DISTLER, V. V., 224
BAUDET, P. v. LARSONNEUR, C., 240
BAUER, J., Inclusions in garnets, *Bohemia*, 62
— & HŘÍČHOVÁ, R., Corrosion in garnets, *Bohemia*, 62
BAUMANN, L. & HOFMANN, J., Tectonics of Pb-Zn-Ág deposit, *Saxony*, 229
BAUMER, A., PIERROT, M., & TURCO, G., Sodium arsenoaluminate hydrate, 26
BAUR, R. v. SCHWEITZ, H. E., 10
BAUSCH, W. M., Strontium in limestone, *Germany*, 38
BAUTSCH, H.-J., Coordination in crystals, 178
— Garnets, *Saxony*, 215
BAYLISS, P., Disordered gersdorffite, *Slovakia*, 181
— LAWRENCE, L. J., & WATSON, D., Copper arsenates, *South Australia*, 163
— & STEPHENSON, N. C., Structure of gersdorffite, 270
— v. GOLDING, H. C., 219, 311; LAWRENCE, L. J., 223
BAYLY, B., Petrology, (book), 88
BAYRAKOV, V. V., Eclogite xenoliths, *Ukraine*, 149
— Clinohumite, *Azov*, 303
— Paragenesis of anthophyllite, 306
— & BOCHKOV, A. A., Andalusite, *Ukraine*, 303
— MAKAROV, N. N., & SUPRYCHEV, V. A., Anthophyllite, *Crimea*, 306
— v. GOROSHNIKOV, B. I., 233
BAXTER, J. W., DESBOROUGH, G. A., & SHAW, C. W., Geology, *Illinois*, (3), 244
BAZAROV, L. S., Formation of pegmatite, 315
BAZAROVA, T. YU., Inclusions in nepheline, pyroxene, 282
— & FEIGIN, YA. M., Crystallization temperature of nephelines, *Lovozero*, 59
BAZILEVICH, Z. A. v. MUN, A. I., 37
BAZILEVSKII, A. T., Mica peridotite dyke, 59
BEALL, G. H. v. WOSINSKI, J. F., 44
BEAN, J. H. v. SINGH, D. S., 141
BEARDSLEY, K. M. v. ROBIE, R. A., 145
BEARTH, P., Ophiolites, *Zermatt*, (book), 231
BEATTY, L. B. v. COLEMAN, R. G., 159
BEAUREGARD, C. G. DER = GOUDER DER BEAUREGARD, C.
BEAUSEIGNEUR, C., Perthitic orthoclase, *Vosges*, 50
BECK, P. A., Possible layer stacking structures, 265
BEESON, M. H. v. GORDON, G. E., 198
BEETEM, W. A. v. BAKER, J. H., 112
BEEVERS, J. R., Determination of Au, 259
BEGEMANN, F., VILCSEK, E., & WÄNKE, H., P isotopes in meteorites, 43
BEHR, H.-J., Quartz orientation in plutons, 229
BEHR, S. H., Heavy minerals, *South Africa*, 188
BEKNAZAROV, K. B. v. PAVLOVA, I. G., 53
BELBOECH, B., BOIVINEAU, J. C., & PERIO, P., U_4O_9 transitions, 16
BELEVITSEV, YA. N., EPATKO, YU. M., & VOROB'YEVA, K. A., Iron, SiO_2 in Precambrian, 201
BELIK, YA. G., KUKOLEV, G. V., SKOMOROVSKAYA, L. A., & SHCHUKAREVA, L. A., Microstructure of electroporcelain, 8
BELITSKYI, I. A. & BONDAREVA, N. YA., Synthetic gillespite, 286
pressure experimental techniques, 87
BELLAI, P., Volcanic activity, *Indian Ocean*, 326
— CARRON, J. P., NOUGIER, J., & TRICHET, J., Origin of red beds, *Kerguelen*, 71
BELLUMINI, G., FORNASERI, M., & NICOLETTI, M., Antimony oxychlorides, 106
BELOBORODOVA, S. S. v. GLAGOLEV, A. A., 8
BELOLIPETSKI, A. P., DENISOV, A. P., ELINA, N. A., & KUL'CHITSKAYA, E. A., Epidotes, allanites, 133
BELOPOISKIY, M. P., Analysis by, 54
— v. KOMKOV, A. I., 26
BELOUsov, G. E. v. EFREMOV, S. V., 7
BELOUsov, V. I., Secondary minerals near thermal waters, *Pauzhetka*, 157
BELOUsov, V. V., Development of Earth's crust, 68
BELOV, N. V., Structural mineralogy, (XVII), 177
— & POBEDIMSKAYA, E. A., Sulphides, chalcogenides, 94
— v. LITVINSKAYA, G. P., 28
BELOV, V. P., Ultrabasic & basic rocks, *Enisei*, 150
BELŠÁNOVÁ, A. v. TVRZNÍK, B., 173
BELYAYEV, G. S., ZARETSKAYA, G. M., & FILIONENKO, N. E., Scum from ferrosilicocromium, 8
BEMMELIN, R. W. VAN, Ignimbrites, 326
BENJAMIN, R. E. K., Axinite-epidote-tourmaline vein, *Connemara*, 134
BENNET, J. H. & MANUEL, O. K., Iodine in deep-sea sediments, 202
BENNETT, J. M. & GARD, J. A., Erionite, offretite, 95
BENNION, R. B. v. WORLTON, T. G., 250
BENSCH, J. J. v. WILLEMSE, J., 245
BENYACAR, M. A. R. DE v. ABELEDO, M. E. J. DE, 314
BENZ, J.-P. & WEPPE, M., Pb-Zn ores, *Sardinia*, 97
BÉRARD, J., Geology, *Labrador*, 151
BERCÉ, B., Prospecting for Hg, 119
BEREZHNENKO, E. T. v. TIKHONOV, V. A., 8
BERG, H. C. & COBB, E. H., Metal-bearing lodes, *Alaska*, 183
BERGE, J. W., Archaean rocks, *Liberia*, 248
BERGER, P. v. BÉTHUNE, P. DE, 132
BERGERHOFF, G., Apatite-type structures, 266
— & PAESLACK, J., Oxygen coordination in crystals, 266
BERKES, L. v. VOSZKA, R., 24
BERKEY, E. & FISHER, D. E., Chlorine in Fe meteorites, 124
BERLIN, T. S. & KHABAKOV, A. V., Ca/Mg in belemnoid rostra, 206
— Belemnite rostra, 327
BERNAL, J. D., DASGUPTA, D. R., & MACKAY, A. L., System iron oxide-hydroxide, 105
BERNARD, J. H. & DUDEK, A., Plutonic rocks, *Czechoslovakia*, 272
— & HANUS, V., Siderite formations, 20
BERNAT, Z. v. MÁNEK, B., 104
BERNER, R. A., Dissolution of carbonates, 27
— Concretion growth, 289
— Stability of Fe sulphides, 285
— v. CLAYTON, R. N., 241
BERRANGÉ, J. P., Origin of anorthosites, 59
BERRIDGE, N. G. & IVIMEY-COOK, H. C., Borehole, *Morayshire*, 162
— v. PEACOCK, J. D., 317

BERRIER, J. v. PEDRO, G., 263
 BERRY, L. G. v. MASON, B., 261
 BERSHOV, L. V. & MARFUNIN, A. S., Electron-hole centres in minerals, 265
 — & MINEYEVA, R. M., Manganese in tremolite, 14
 — v. MARFUNIN, A. S., 15
 BERTAUT, E. F. v. BACMANN, M., 16; COHEN-ADDA, C., 267
 BERTHELSON, A., Cryolite deposit, Greenland, 146
 BERTHOIS, L. & AUFFRET, G., Fall rates of fine particles, 257
 — & BOUILLE, S., Analysis of sediments, 84
 BERTINE, K. K. v. KHARKAR, D. P., 204
 BERTRAND, J. M. L. & CARY, R., Precambrian rocks, Sahara, 248
 BERZINA, A. P. & SOTNIKOV, V. I., Formation temperatures & pressures, *Sor*, 187
 — & RYLOV, G. M., K-feldspars, *Siberia*, 50
 — v. NIKITINA, E. I., 58
 BESOAIN, E., Volcanic ash soils, *Chile*, 265
 BESSON, H., CAILLERE, S., & HÉNIN, S., Alteration of mica, 111
 — — — Mica-vermiculite transformation, 263
 BESSON, M., Geikieelite in ilmenites, *Guinea*, 55
 BEST, M. G., HENAGE, L. F., & ADAMS, J. A. S., Mica peridotites, lamproites, *Utah*, 330
 BETELEV, N. P., Hydrogen in natural gas, *Ust'-Urt*, 297
 BETHKE, P. M. v. ROBIE, R. A., 145
 BÉTHUNE, P. de, GOOSSENS, P., & BERGER, P., Zoned garnet, *Zermatt*, 132
 — & JANS, H., Pleochroism of alkali-*amphiboles*, 305
 — v. JANS, H., 305
 BEUGNIES, A., Wolframites, 312
 — & MOZAFARI, C., Columbotantalites, tapiolites, 312
 BEUNK, F. F. v. ROEVER, W. P. de, 221
 BEUS, A. A., Tantalum, niobium in muscovites, 35
 BEUTELSPACHER, H. & MAREL, H. W. van der, Electron microscopy of clay minerals, (book), 88
 BEYER, H., Structure of tellurite, 269
 BEZRODNYKH, Yu. P., Copper & silver mineral associations, *Udokansk*, 186
 BEZZI, A. v. GALLI, M., 246
 BHANDARI, N., ARNOLD, J. R., & PARKIN, D. W., Cosmic dust in stratosphere, 302
 BHAT, T. R. v. GOKHALE, Y. W., 103
 BHATTACHARJI, S., Magmatic flow differentiation, 152, 227
 BHATTACHARYYA, C., Linear structures in mica, *Andhra Pradesh*, 49
 BHATTACHERJEE, L., v. BHATTACHERJEE, S. B., 112
 BHATTACHERJEE, S. v. BHATTACHERJEE, S. B., 112
 BHATTACHERJEE, S. B., GHOSH, A. K., BHATTACHERJEE, L., & BHATTACHERJEE, S., Minor elements in rocks, *Singhbhum*, 112
 BHATTY, M. I., RASHEED, A. Z., & QURESHI, A. A., Concentration of Pb ore, 103
 BHOLA, K. L., RAO, P. R., & CHAUBE, D. N., Li-bearing pegmatites, *India*, 136
 BIANCONI, F. & SIMONETTI, A., Brannerite, *Tessin*, 223
 BIEMANN, K. v. HAYES, J. M., 213
 BIENFAIT, M. & KERN, R., Formation of crystalline texture, 283
 BIGGAR, G. M., Apatite compositions, 25
 — v. WYLLIE, P. J. 25
 BILIBIN, YU. A., Gold occurrences, *Kolyma*, 184
 — Localization of Au, *Aldan*, 184
 — Metallogenesis, *Yakutia*, 183
 BILLIET, Y. v. DELAMOYE, P., 180
 BILLINGS, G. K. & WILLIAMS, H. H., Chlorine in shales, *Alberta*, 115
 — v. ANGINO, E. E., 88, 204
 BINDEMAN, N. N., Hypogene mineralization, *Transbaikal*, 278
 BINNS, R. A., Maskelynite in meteorites, 43
 — Barroisite-bearing eclogite, *Norway*, 47
 — Olivine in chondrites, 121
 — Xenoliths in chondrites, 210
 — Asbestiform bastamite, *New South Wales*, 305
 BIRLE, J. D. & TETTENHORST, R., Refined muscovite structure, 178
 BIRRELL, K. S., Volcanic ash soils, 265
 BIRRELL, P. J. v. MOORE, C. B., 124
 BISCHOFF, J. L., Calcite nucleation, 284
 BISWAS, A. B. v. KSHIRSAGAR, S. T., 15
 BISWAS, A. K., Flotation of carbonate minerals, 103
 BJAREBY, G., Hühnerkobelite, *New Hampshire*, 78
 — Anatase, brookite, *New Hampshire*, 79
 BLACK, P. M. v. RICHARDS, J. R., 2
 BLACK, R., Anorthosite associated with granite, *Nigeria*, 152
 BLACKADAR, R. G., Basic intrusions, *Queen Elizabeth islands*, 151
 BLAISE, J. & LAFFARENT, A. F. de, Granites, *Afghanistan*, 322
 BLAKE, D. H., Net-veined complex, *Iceland*, 60
 BLAKEMORE, K., Mill, *Idar-Oberstein*, 31
 BLANCHARD, R. L. v. JOHNSON, N. M., 83
 BLANDER, M., Ternary molten salt systems, 283
 BLECHA, J. v. RICHTER, O., 104
 BLINOV, G. A., GOTS, A. S., & LEBEDEV, V. N., Exploratory boreholes, *Kola peninsula*, 102
 BLISKOVSKI, V. Z., Hydrogrossular, *Yakutia*, 162
 BLOOMFIELD, K., Aegirine-gneisses, *Malawi*, 63
 — & GARSON, M. S., Geology, *Kirk range-Lisungue valley*, 235
 BLOSS, F. D., FRENZEL, G., & ROBINSON, P. D., Diffractometry technique, 84
 BLOT, P., Analyses by, 47, 61, 216
 BLUM, W. E. & MAUS, H., Triassic-Quaternary sediments, *Rhine valley*, 328
 BLYTH, C. R. v. GRAF, D. L., 182
 BOBER, L., GUOWA, I., & WIESER, T., Graphitoid schists, *Tatra mts.*, 39
 BOBRIEVICH, A. P., Ultrabasic xenoliths in kimberlite, *Yakutia & South Africa*, 145
 BOCHAROV, G. I., Bitumens, *Transbaikal*, 144
 BOCHKOV, A. A. v. BAYRAKOV, V. V., 303; GOROSHNIKOV, B. I., 233
 BOCK, E., Gypsum transition in brines, 26
 BOQUET, J.-P. & DORNELAS, W., Mixed spinels, 191
 BODECHETEL, J. & KLEMM, D. D., Pb-Bi-sulphosalts, 20
 BODENHEIMER, W. v. BARTURA, J., 170
 BOELRIJK, N. A. I. M. v. PRIEM, H. N. A., 256
 BOERBOOM, A. J. H. v. PRIEM, H. N. A., 256
 BOETTCHER, A. L. & WYLLIE, P. J., Biaxial calcite, 107
 — — Melting in silicate-H₂O systems, 195
 BOFFINGER, V. M. & COMPSTON, W., Age of rocks, *New York & Pennsylvania*, 81
 BOGACHEV, A. I., GORELOV, V. A., & KOCHNEV-PERVUKHOV, V. I., Rocks, sulphide mineralization, *Pechenga-Lotta*, 97
 BOGARD, D. D., Krypton in achondrites, 200
 BOGATIKOVA, V. K. v. KRUCHININ, Yu. D., BOGDANOV, YU. B., VOINOV, A. S., SUKHOANOV, V. A., & KHARITONOV, L. YA., Structural relationships, *Karelia*, 149
 BOGOLEPOV, V. G., Textural-structural factors in metamorphism, *Kazakhstan*, 39
 BOGORODSKAYA, L. I. v. KONTOROVICH, A. E., 116
 BOGOSLOVSKAYA, E. I. v. DOBROTSVETOV, B. L., 9
 BOHM, J., VD structures, 178
 BOHONY, E. v. KEDVES, M., 80
 BOHOR, B. F. v. EHRLINGER, H. P., III, 180
 BOHUN, A., ECKSTEIN, J., LÉBL, M., TREKKA, J., Colloid formation in alkali halides, 104
 — v. ECKSTEIN, J., 104
 BOIKOVA, A. I. & TOROPOV, N. A., Silicate solutions of silicates, 8
 BOIVIEAU, J. C. v. BELBOECH, B., 16
 BOKIY, G. B., Structure of chukhrovite, 180
 BOKUN, R. A. v. NEPROCHNOV, YU. P., 145
 BOLAU, E., Tertiary volcanism, *Sweden*, 230
 BOLFA, J. v. BABKINE, J., 252; REITHLE, J.-C., 284
 BOL'SHAKOV, A. P. v. KARASIK, M. A., 298
 BOLT, G. H. & WINKELMOLEN, C. J. G., Cation-exchange in clay systems, 263
 BOLTNEKOV, B. S. v. ALIMOV, I. A., 5
 BOLTNEVA, L. I., BUJANOV, L. I., DMITRIYEV, A. V., IONOV, V. A., KOGAN, R. M., & NAZAROV, I. M., Radioactivity of sands, *Soviet Central Asia*, 293
 BOLTON, J. v. TINKER, P. B. H., 91
 BONATI, E., Volcanism, *Pacific Ocean*, 87
 BONDAR', I. A. & TOROPOV, N. A., Rare-earth silicates, 8
 BONDARENKO, L. N., Granulites, charnockites, *Kola peninsula*, 158
 BONDARENKO, L. P., Paracharnockites, *Kola peninsula*, 158
 BONDARENKO, V. N. & KHOTIN, M. Yu., Neogene volcanism, *Kamchatka*, 153
 BONDAREVA, N. Ya. v. BELITSKIY, I. A., 280
 BONHOMME, M., COGNE, J., LEUTWEIN, F., & SONET, J., Age of clays in sandstones, *Normandy & Brittany*, 257
 BONSHEDEK-KUPLETSKAYA, É. M. v. CHUKHOV, F. V., 6
 BONTE, A., Bauxite formation on limestone, 102
 BOONE, G. M. & WHEELER, E. P., 2nd
 — Staining for cordierite, feldspars, 170
 BOOTH, A. R. & CHARLES, J. A., Levitation melting apparatus, 24
 BOOTH, B., Granites, *Land's End*, 68
 BOCOS, M., Formation temperatures, *Metamorphic mts.*, 275
 — v. RĂDULESCU, D., 319
 BORDET, P., Birefringence dispersion of plagioclases, 83
 — KRUMMENACHER, D., MOUTERDE, R., & RÉMY, M., Age of rocks, *Nepal*, 82
 BORENSTAJN, J., Metavariscite, meta-strengite, 181
 BORG, I. Y., Calculation of amphibole formulae, 135
 BORIANI, A., Gabbro-hornblende stock, *Loro*, 232
 BORISHANSKAYA, S. S., KRUTOV, G. A., & MAKHMUDOV, A. I., Alloclasite, *Azerbaijan*, 310
 BORISOV, O. G. & BORISOVA, V. N., Temperature of agglomerate flow, *Bezymyannaya volcano*, 153
 BORISOV, P. A., Mineral resources, *Karelia ASSR*, 102
 BORISOVA, V. N. v. BORISOV, O. G., 153
 BORKOWSKA, M., Gneisses, *Sudetes*, 72

ORRIANI, A. *v.* PEYRONEL, P. G., 248
ORSHCHEVSKI, YU. A., Red colour of K salts, 164
— *v.* SOBOLEV, R. N., 257
OSE, B. B. *v.* CHOWDHURY, A. N., 295
OSE, M. K., Feldspars in syenitic magmas, 50
— Upper mantle & alkalic magmas, 324
OSMA, W., Cordierite porphyroblasts, Pyrenees, 304
OSSE, H.-R., Fluorite veins, *Bavaria*, 22
OSTRÖM, K., Manganese in pelagic sediments, 87
OSWELL, C. R., BROOKS, R. R., & WILSON, A. T., Trace elements in lakes, *McMurdo Sound*, 297
OTKUNOV, A. I., Broken diamond crystals, 54
OUDETTE, E. L. *v.* ESPENSHADE, G. H., 151;
FORD, A. B., 170
OUGNÈRES, L. & BROUSSE, R., Volcanic oolites, *Auvergne*, 328
OUILLÉ, S. *v.* BERTHOIS, L., 84
OULADON, J. *v.* DE LAPPARENT, A. F., 19
OULTON, J. F. & EARDLEY, R. P., Boron carbide mortar, 170
OURGUIGNON, P. *v.* GOUDER DER BEAUREGARD, C., 192
OUSTEAD, J. *v.* AXON, J. H., 211
OUT, P., Volcanic outcrops, *Puy-de-Dôme*, 317
OUVIER, J. L., Analysis by, 135
BOWEN, R. W. *v.* JACKSON, E. D., 4
OYADJIEV, S., Magmatism, *Bulgaria*, 319
OYD, F. R., High-pressure studies, 87
OYER, C., Folding & granitization, *Forez mts.*, 238
— Keratophyres, *Redon*, 317
OYOLE, R. W., Pb-Zn-Ag ores, *Yukon*, 98
— Sulphide ores, *New Brunswick*, 98
— *v.* JAMBOR, J. L., 131
OZHENOV, P. I., SAL'NIKOVA, V. S., & PROKOF'YEVA, V. V., Pyroxene olivinite rocks, *Kovdor*, 8
OZACE, W. F., WALSH, J. B., & FRANGOS, W. T., Permeability of granite, *Rhode Island*, 250
BRADBURY, J. P. *v.* KIRKLAND, D. W., 71
BRADDOCK, W. A. *v.* PETERMAN, Z. E., 168
BRADMAN, O., ALEXANDER, E., & STEINBERGER, I. T., Synthetic ZnS polytypes, 181
— *v.* MARDIX, S., 181
BRAGIN, B. A. *v.* GLAGOLEV, A. A., 8
BRAITHWAITE, R. S. W. & KNIGHT, J. R., Serpierite, *Staffordshire*, 252
BRANCH, C. D., Igneous rocks, *Queensland*, 152
— Volcanic cauldrons & ring complexes, *Queensland*, 323
BRANDT, S. B., PETROV, B. V., & KRIVENTSOV, P. P., Argon migration from stressed sylvine, 167
BRANNOCK, K. C., Spodumene mine, *North Carolina*, 78
BRANNOCK, W. W. *v.* COLEMAN, R. G., 159
BRASSEUR, H., Structure of etelite, 270
BRAUN, K. N., ASHIKHMINA, N. A., & MAGIDOVICH, T. S., Accessory minerals in granitoids, *Buryat ASSR*, 7
BRECK, D. W. *v.* FLANIGEN, E. M., 31
BRECKE, E. A., Sulphides and S deposits, *Illinois & Kentucky*, 272
— *v.* PEYRONEL, P. G., 248
BRIEGLEB, D., Amphibolite, *Tyrol*, 247
BRIGGS, L. I. *v.* WEBB, W. M., 48
BRILL, R. & TIPPE, A., Structure of ice-I, 269
BRINCK, J. W. & HOFMANN, A., Beryllium distribution, *Oslo*, 37
BRINDLEY, G. W., ACHAR, B. N. N., & SHARP, J. H., Kinetics of dehydroxylation, (II), 289
— *v.* PONCELET, G. M., 90; THOMPSON, T. D., 11
BRINKMANN, R., Volcanic flow fabrics, *Hesse*, 324
BROBUST, D. A. & WARD, F. N., Determination of Ba, 258
— *v.* SHAWE, D. R., 23
BROCK, A., Palaeomagnetism of igneous rocks, *Rhodesia*, 252
BROCK, M. R. *v.* ZARTMAN, R. E., 256
BRODTKORB, M. K. DE, Ores, *Argentina*, 274
BRON, V. A., Recrystallization of periclaste, 8
BRONGERSMA-SANDERS, M., Barium in diatoms, 117
BROOKINS, D. G., Kimberlites, limestones, *Kansas*, 290
BROOKS, C., Ages of igneous rocks, *Tasmania*, 1
BROOKS, C. K., Sr/Ca ratio in igneous rocks, 292
— *v.* FAWCETT, J. J., 60
BROOKS, J. D. & SMITH, J. W., Plant lipids in coal formation, (I), 116
BROOKS, R. R., PRESLEY, B. J., & KAPLAN, I. R., Interstitial waters of sediments, *California*, 204
— *v.* Boswell, C. R., 297
BROUGHTON, P. L., Peanut obsidian, *Mexico*, 253
BROUSSSE, R., Age of basalts, *Mont-Dore*, 82
— GUÉRIN, H., LEFÈVRE, C., & VARET, J., Charnockite & granulite enclaves, *Massif Central*, 156
— & LEFÈVRE, C., Pumice, *France*, 317
— & VARET, J., Trachytes, *France*, 317
— *v.* BOUGNÈRES, L., 328; DANTIER, M., 247
BROUWER, H. A., Albitic gneisses, *Venezuela*, 75
BROVKIN, A. A., ALEKSANDROV, S. M., & NEKRASOV, I. YA., Ludwigit-vonsenite series, 128
BROWN, C. E., Fluorite, *Iowa*, 338
BROWN, G. M. *v.* WAGER, L. R., 173
BROWN, H. *v.* NICHOPURK, W., 123
BROWN, H. S. *v.* FULLAGAR, P. D., 290
BROWN, J. S., Lead isotopes in ores, *British Isles & Scandinavia*, 113
BROWN, J. W., Jurassic dolerites, *Falklands*, 323
BROWN, M. J. F., ELLIS-GRUFFYDD, I. D., FOSTER, H. D., & UNWIN, D. J., Age of organic mud, *Wales*, 1
BROWN, P. E., MILLER, J. A., & GRASTY, R. L., Age of granites, *British Isles*, 168
BROWN, W. L. *v.* GRUNDY, H. D., 51
BROWN, W. W. *v.* GOVETT, G. J. S., 298
BRUGGER, R. M. V. WORLTON, T. G., 250
BRULJS, P. C. M. N. *v.* GROOT, T., 5
BRUNFELT, A. O., JOHANSEN, O., & STEINNES, E., Determination of Cu, Ga, Zn, 86
— *v.* STEINNES, E., Determination of Sb, 259
— patterns, 258
BUBENICEK, L., Iron deposits, 278
BUBICS, I. *v.* SZADECKY-KARDOSS, E., 333
BUCHANAN, R. A. *v.* WICKERSHEIM, K. A., 216
BUCHWALD, V. F., Iron meteorites, 43
— Föllinge meteorite, 125
BUDA, G., Andesite laccolith, *Csódi mt.*, 237
BUDYEYVA, K. P. *v.* MUN, A. I., 37
BUDINGER, T. F. & ENBYSK, B. J., Age of basalt, *Pacific Ocean*, 168
BUKIEWICZ, M. & HEFLIK, W., Sandstone-clay, *Silesia*, 71
BUDWORTH, D. W. *v.* WARMAN M. O., 25
BUERGER, M. J., DOLLASE, W. A., & GARAYCOCHEA-WITTEK, I., Structure of pharmacosiderite, 271
— & TAXER, K., Rhodizite, *Madagascar*, 180
— *v.* TAXER, K. J., 269
BUFFIÈRE, J.-M., FAHY, J.-C., & PETEY, J., Precambrian rocks, *Algérie*, 321
BUHL, R. *v.* VILLERS, G., 105
BUIST, D. S., Calcium hexaluminite, 106
BUKIN, G. V., Aenigmatite, *Khibiny*, 135
BUKIN, V. I. *v.* SEMENOV, E. I., 304
BULAKH, G., ANASTASENKO, G. F., & DAKHIVA, L. M., Calzirite, *Siberia*, 224
BULGAKOVA, M. D., Cinnabar, ludwigite, *Khara-Ulakh*, 100
BULIAN, W., DITTMAR, A., & FEHÉR, F., Sulphur extraction from natural gas, 189
BULKIN, G. A., Mercury correlations in rocks, *Crimea*, 115
BULLEN, K. E., Compressibility at mantle-core boundary, 335
BULLERWELL, W., Ashton Park borehole, *Bristol*, 154
BÜLOW, K. *v.* Geology of Moon, (IX), 316
BÜLTEMAN, H., Uranium minerals, *Hessen & Bavaria*, 77
BUNCE, E. T., LANGSETH, M. G., CHASE, R. L., & EWING, M., Age of pyroxene, *Somali basin*, 165
BUNCH, T. E., KEIL, K., & SNETSINGER, K. G., Chromite from chondrites, 122
— *v.* SNETSINGER, K. G., 122
BUNKER, C. M. *v.* MOXHAM, R. M., 98
BURCHART, J., Isotopic dating, 83
BURGER, A. *v.* ULRICH, T. J., 255
BURGER, A. J. *v.* NIEKERK, C. B. VAN, 165
— NICOLAYSEN, L. O., & AHRENS, L. H., Leaching of monazites, 167
BURGER, A. L. *v.* OOSTHUYSEN, E. J., 165
BURGER, K. *v.* PRASHNOWSKY, A. A., 295
BURKOV, V. V. & PODPORINA, E. K., Rare elements in kimberlites, 201
BURLINGAME, A. L. & SIMONEIT, B. R., Fatty acids in oil shale, *Green river*, 295
— *v.* HAUG, P., 203
BURNETT, D. S. & WASSERBURG, G. J., Age of meteorite inclusions, 212
— Kodaikanal octahedrite, 302
BURNHAM, C. W., CLARK, J. R., PAPIKE, J. J., & PREWITT, C. T., Nomenclature for clinopyroxenes, 267
— *v.* ANDERSON, G. M., 28; GÜVEN, N., 268
BURNOL, L. *v.* AUBERT, G., 148
BURNS, A. F. & WHITE, J. L., Cation-exchange capacity, 89
BURNS, R. G., Iron in pyroxenes, amphiboles, 177
— & FYFE, W. S., Transition metals, 87

— *v.* BANCROFT, G. M., 93, 177, 180, 266
 Burova, T. A. *v.* DORFMAN, M. D., 252
 Burova, Z. N., Analysis by, 130
 Burratago, F., Italian chondrites, 210
 Burri, C., Monoclinic feldspar, 137
 — PARKER, R. L., & WENK, E., Determination of plagioclases, (book), 172
 — TATAR, Y., & WEIBEL, M., Recent volcanites, *Turkey*, 322
 Burri, G., Graeser, S., Marumo, F., & Nowacki, W., Imhofite, *Lengenbach*, 126
 Burtseva, Z. A. & Porotova, G. A., Alkaline intrusions, *Kola peninsula*, 150
 Buryak, V. A., Mineralization & metamorphism, *Vitim-Patom*, 183
 — Gold ores, *Lena*, 277
 Busch, W. L., 1965 mineral production, *Illinois*, 182
 Buschendorf, F. & Puchelt, H., Baryte, *Germany*, (I), 34
 Buseck, P. R., Beenham hypersthene chondrite, 121
 — Newport pallasite, 123
 — Pyrosomatic ores, *Nevada*, 277
 — Moore, C. B., & Goldstein, J. I., Marburg pallasite, 125
 Butler, A. P. *v.* Rosholz, J. N., 294
 Butt, Yu. M., Kolbasov, B. M., & Lagoida, A. V., Hydrate phases in cement, 9
 — Timashev, V. V., & Kaushanski, V. E., Tricalcium silicate, alite, 9
 Butterill, J. D. & Nickel, E. H., Surface properties & refractive index, 83
 Butterman, W. C. & Foster, W. R., Zircon stability, 28
 Buturlinov, N. V., Panov, B. S., Kobelev, M. V., & Karlov, G. F., Pyroxenites, *Dombas*, 115
 — *v.* Nikolskiy, I. L., 183
 Buyanova, L. I. *v.* Boltneva, L. I., 293
 Byelee, J. D., Frictional characteristics of granite, 250
 Bykov, I. I. *v.* Khan, B. Kh., 8
 Bykov, I. N. *v.* Ruzhitskiy, V. O., 149
 Bykova, A. V., Analysis by, 312
 — *v.* Kapustin, Yu. L., 304; Semenov, E. I., 313
 Bykova, Y. L. & Nikitina, I. B., Organic matter in waters, *Yakutia*, 40

Cabri, L. J., System Au-Ag-Te, 104
 Cahen, L. & Ledent, D., Age of granites, *Anti-Atlas*, 81
 Caillère, S. & Inigez Rodriguez, A. M., Clay deposits, *Argentina*, 11
 — & Pobeguin, T., Bauxites, *France*, 23
 — — Pisolites in bauxite, *Baux*, 141
 — — Striped bauxites, *Baux*, 175
 — *v.* Besson, H., 111, 263
 Califet, Y. & Louis, M., Amino acids in sediments, *Bay of l'Aiguillon*, 240
 Callahan, W. R. *v.* Hovis, W. A., Jr., 76
 Callame, B., Gas diffusion through sediments, 104
 Calligari, E. & De Pieri, R., Chess-board albites, 15
 — — Unmixing in sanidines, *Dolomites*, 50
 — — Intergrowths between sanidine & albite, *Italy*, 232
 — & Viterbo, C., Garnets from eclogites, *Italy*, 247
 Calleri, M. & Ferraris, G., Haidingerite, 16
 Callow, K. J., Sulphide ores, *Philippines*, 274
 — & Worley, B. W., Jr., Telluride minerals, *Philippines*, 278
 Calvert, S. E., Varved sediments, *California*, 71

Calvin, M. *v.* McCarthy, E. D., 205
 Cameron, E. N. & Van Rensburg, W. C. J., Polishing of ores, 3
 — *v.* Desborough, G. A., 269; Van Rensburg, W. C. J., 145
 Camp, L. R. *v.* Ehrlinger, H. P., III, 189
 Campana, B., Iron ores, *Western Australia*, 279
 Campbell, F. E. & Roeder, P., Stability of olivine, pyroxene, 286
 Campiglio, C. & Potenza, R., Olivinic facies in gabbro, *Lombardy*, 239
 Canalias, R. A., Alexander, E. C., & Manuel, O. K., Noble gases, 289
 Canilho, M. H., Salvado, M. G., & Martins Nunes, A., Andesite, *Valejas*, 148
 Cannillo, E., Giuseppetti, G., & Tazzoli, V., Structure of leucophanite, *Norway*, 267
 Cannon, H. L. & Davidson, D. F., Trace elements & nutrition, 206
 Capdevila, R. & Viallette, Y., Age of granites & schists, *Lugo*, 83
 Capedri, S., Ophiolitic rocks, *Italy*, 61
 — *v.* Scaini, G., 58
 Carapezza, M. & Morandi, N., Montmorillonites in hyaloclastites, 195
 Carbonell, J.-P., Iron & silica in rivers, *Cambodia*, 119
 Carle, W., Thermal & mineral waters, *Vesuvius*, 41
 Carme, F., Volcanic formations, *Alps*, 148
 Carmichael, I. S. E., Volcanic minerals, *Iceland*, 311
 — *v.* Pye, W. S., & Machin, D. J., Magnetic susceptibility of deuterite, *California*, 76
 — Hampe, J., & Jack, R. N., Analysis of standard rocks, 290
 — & Nicholls, J., Oxygen fugacities in volcanic rocks, 223
 — *v.* Al-Rawi, Y., 329
 Carozzi, A. V. & Textoris, D. A., Palaeozoic carbonate microfacies, *United States*, (book), 88
 — *v.* Lacey, J. E., 240
 Carpenter, A. B., System CaO-MgO-CO₂-H₂O, *California*, 142
 Carpenter, G. B. *v.* Swink, L. N., 169
 Carpenter, R. H. *v.* Desborough, G. A., 106
 Carrat, H. G., Granitization, *Morvan*, 318
 Carron, J.-P., Composition of lavas, 239
 Carron, J. P. *v.* Bellair, P., 71
 Carron, M. K. *v.* Cuttitta, F., 214; Schaller, W. T., 307
 Carstens, H., Genesis of growth twinning, 249
 Carvajal, H. *v.* Galvan, J., 154
 Cary, R. *v.* Bertrand, J. M. L., 248
 Cases, J., Null charge point of kyanite, 189
 Castiglione, P. C. *v.* Cocco, G., 269
 Catanzaro, E. J., Interpretation of zircon ages, 261
 Caye, R., Picot, P., Pierrot, R., & Permingeat, F., Vebaite, *Allchar*, 57
 Cazeneuve, H., Age of basement rocks, *Buenos Aires*, 256
 Čech, F., Bismutoferrite, *Bohemia*, 53
 Čeena, I. *v.* Černý, P., 238
 Černý, M. & Pekárek, L., Alloying single crystals, 104
 Černý, P., Pseudomorphs after axinite, *Moravia*, 49
 — Jakš, P., & Černá, I., Cordierite-quartz intergrowths in pegmatites, 238
 — & Miškovský, J., Phlogopite, vermiculite, *Moravia*, 11, 137
 — & Povondra, P., Natrolites, *Moravia*, 52
 — Sr-chabazite, *Moravia*, 52
 Červen, J. F. *v.* Fang, J. H., 84

Chá, J. & Pelc, Z., Proterozoic rocks, 33
 Chaigneau, M., Volcanic gas, *Stromboli*, 23
 — *v.* Roblot, M.-M., 294
 Chakrabarti, A. K., Pb-Zn ores, *Rajasthan*, 273
 Chakraborty, K. L., Chromites, *India*, 14
 Chakraborty, S. C. *v.* Chowdhury, A. N., 295
 Chalov, P. I., Merkulova, K. I., & Tuzova, T. V., Uranium in waters & sediment, *Aral Sea*, 169
 Chamaalaun, F. H. *v.* McDougall, I., 77
 Chamley, H. & Colomb, E., Argillaceous deposits, *Cucuron basin*, 174
 Champion, K. P., Taylor, J. C., & Whittier, R. N., Determination of Sr, 86
 Chan, K. M. & Riley, J. P., Determination of V, 4
 — — Determination of W, 171
 Chandra, D., Storage of coals, 23
 — Reflectance of coals, *India*, 23
 Chang, Chien-hung *v.* Peng, Tze-chung, 129
 Chang, Feng-lin *v.* Yuan, Chi-lin, 67
 Chang, L. L. Y., Tungstate-molybdate systems, 284
 Chang, Y. A., Bulk modulus of MgO, 75
 Chang, Yu-yen *v.* Yuan, Chi-lin, 67
 Chao, E. C. T., Impact metamorphism, 87
 — *v.* Miesch, A. T., 44; Milton, C., 127
 Chao, T. *v.* Sun, S.-C., 189
 Chapman, D. R. & Gault, D. E., Origin of tektites, 213
 — Keil, K., & Annell, C., Glasses, *Victoria & Tasmania*, 214
 Chappell, J. M. A. *v.* Stipp, J. J., 256
 Charles, J. A. *v.* Booth, A. R., 24
 Charpin, P. *v.* Gillardeau, J., 96
 Chase, A. B. & Wolten, G. M., Analogues of magnesophosphate, 192
 — *v.* Wolten, G. M., 105
 Chase, R. L. *v.* Bunge, E. T., 165
 Chatonier, D. *v.* Dauphin, J., 119
 Chaupe, D. N. *v.* Bhola, K. L., 136
 Chauris, L., Granite massifs, *Finistère*, 15
 — *v.* Deutsch, S., 82
 Chauvel, J.-J. & Phan, Kieu Duong, Apatite in Fe ore, *Brittany*, 313
 Chaval, C., Analysis by, 303
 Chayes, F., Strength of associations, 87
 — Field boundaries in phase diagrams, 283
 Chekunov, A. V. *v.* Neprochnov, Yu. P., 145
 Chelishchev, N. F., Pegmatites & plutonic formation, *Monchegorsk*, 152
 — Diffusion due to pressure gradient, 197
 — Crystallization of basalt, 287
 Chen, Shu-zhen *v.* Qian, Zi-qiang, 128
 Chenevo, M. & Didier, J., Fine-grained igneous rocks, *Massif Central*, 331
 — *v.* Ravier, J., 238
 Cheney, E. S. & Lange, I. M., Sulphurization, *Sudbury*, 275
 Cheng, F. S. *v.* McAtee, J. L., Jr., 91, 174
 Cheng, Yu-chi, Metamorphic & magmatic rocks, *Shantung*, 257
 Chepizhnyy, K. I., Scandium minerals, *Urals*, 114
 Chepulin, V. A. *v.* Novikov, A. I., 9
 Cherdynsev, V. V. & Kolesnikov, E. M., Argon in shungite, 293
 Cherepanov, V. A., Danburite concretions, *Siberia*, 222
 Cherepivskaya, G. E. *v.* Zhabin, A. G., 18
 Cherepova, K. A., Analysis by, 320
 Chernik, L. N., Reflectivity of minerals, 5
 — *v.* Syritso, L. F., 55
 Chernov, A. A. & Lewis, J., Computer model of crystallization, 249
 Chernov, G. M. *v.* Vinogradov, A. P., 25

ERNYAEV, L. A. *v.* YUSHKO-ZAKHAROVA, O. E., 226

ERNYSH, A. P. *v.* ALEKSEYEV, V. A., 82

ERNYSHEV, L. V. *v.* ANILOV, V. N., 26

ERNYSHEVA, V. I. *v.* GLADKIKH, V. S., 35; UDINTSEV, G. B., 321

ERNYSHOVA, V. F. *v.* TATARSKY, V. B., 309

ERRY, R. D. *v.* AHRENS, L. H., 132

ESNOKOV, B. V. & POPOV, V. A., Quartz grains in eclogite, *Urals*, 158

ESSELET, R. & LALOU, C., Radioactive elements in planktonic detritus, 118

ESTER, R. & ELDERFIELD, H., Infrared identification of carbonates, 224

& HUGHES, M. J., Analysis of marine sediments, 170

ESWORTH, W., Granites, *Ontario & Scotland*, 315

EVRETON, M., Transition metal chalcogenides, 178

HIBA, M. *v.* FUJIWARA, S., 132; NAGASHIMA, K., 132, 142

HIBUKHCHYAN, Z. O. *v.* KUZNETSOV, E. A., 83

HILLINGAR, G. V. *v.* LARSEN, G., 88

HIRIAC, M. & LĂCĂTUŞU, A., Green schists, *Dobrogea*, 248

HISTYAKOVA, A. A., System $\text{Na}_2\text{O}-\text{Al}_2\text{O}_3-\text{H}_2\text{O}$, 9

HIZHIKOV, D. M. & SHCHASTLIVYI, V. P., Selenites, selenides, (book), 172

HIMELIK, F. B., Electro-osmotic core cutting, 170

HODOS, A. *v.* NICHIPORUK, W., 123

HODYNIECKA, L., Basalt, *Silesia*, 63

HOUBERT, B., Magmatic evolution, 32

HOUDHARY, P. D. *v.* SATHE, R. V., 47

HOWDHURY, A. N., CHAKRABORTY, S. C. & BOSE, B. B., Gallium in bauxite, *India*, 295

HRIST, C. L. *v.* HOSTETTLER, P. B., 194

HRISTOPHE-MICHEL-LÉVY, M., Transformation of alkali feldspars, 110

HEYSTALL, R. S. B., Thermal expansion of pyrite, 336

HUDINOV, YU. V., Faulting in ores, *Tien-Shan*, 275

HUDOBA, K. *v.* HINTZE, C., 126

HUENKO, L. I., Analysis by 55

HUGUNOV, N. A. *v.* KARPOV, P. A., 320

HUKHROV, F. V. & BONSHTEIDT-KUPLET-SKAYA, Ė. M., Minerals, (book), 6

& SARKAR, S. N., 82

CHUNG, CHIA-YOU *v.* MA, CHONG-CHING, 160

CHUNG, D. H., Elastic constants of cubic crystal, 249

CHUNG, FU-TAU *v.* LI, PU, 248

CHUPRININA, I. I. *v.* PAVLOV, N. V., 223

CHURMANTEYEV, M. N. *v.* PANKINA, R. G., 41

CHUTE, J. H. & QUIRK, J. P., Potassium release from illites, 10

CHOFICĂ, G., Intrusive rocks, *Romania*, 319

& PATRILIU, D., IONESCU, J., & UDUBASA, G. G., Ophiolites, *Persian mts.*, 319

ČIRIĆ, B. *v.* DIMITRIJEVIĆ, M., 333

CISSARZ, A., Deposit formation, 17

& LEUBE, A., 272

CLABAUGH, P. S. *v.* SPENCER, A. B., 3

CLARK, A. H., Mackinawite, *Cornwall*, 77

Formation of Fe ores, *Ontario*, 99

Sulphide deposition, *Rhodesia*, 222

MAYER, A. E. S., MORTIMER, C., SILLITO, R. H., COOKE, R. U., & SNELLING, N. J., Ages of ignimbrite flows, *Atacama desert*, 2

CLARK, A. R. *v.* SCHWERDTNER, W. M., 324

CLARK, C. D. & NORRIS, C. A., Defect centres in diamond, 251

CLARK, J. R. *v.* BURNHAM, C. W., 267

CLARK, L., Granulites, *Uganda*, 74

& NIXON, P. H., 64

CLARK, L. A., Nickel ores, *Quebec*, 99

CLARK, R. S., RAO, M. N., & KURODA, P. K., Xenon in meteorites, 208

& ROWE, M. W., GANAPATHY, R., & KURODA, P. K., Iodine, uranium, tellurium in meteorites, 122

& KURODA, P. K., 208

CLARKE, R. H. *v.* AUCOTT, J., 199

CLARKE, R. S., Jr. *v.* CUTTITTA, F., 214

CLAYTON, R. N., JONES, B. F., & BERNER, R. A., Dolomite formation, *California*, 241

CLEVERLEY, W. H. *v.* McCALL, G. J. H., 124

CLIFFORD, T. N., Pre-Silurian geology, *Africa*, 261

CLIFTON, H. E., HUBERT, A., & PHILLIPS, R. L., Sample pre-concentration, 84

CLOUD, P. E., Jr., Bauxite deposits, *Alabama*, 22

COATES, R. V. & WOODARD, G. D., Chukhrovite-type compounds, 143

COBB, E. H. *v.* BERG, H. C., 183

COBB, J. C., Trace elements in Fe meteorites, 211

COCO, G., CASTIGLIONE, P. C., & VAGLINSINDI, G., Structure of thomsenolite, *Greenland*, 269

& CORAZZA, E., & SABELLI, C., Glauberite, *Madrid*, 181

& FANFANI, L., & ZANAZZI, P. F., Tarbuttite, 16

& — Structure of fornamite, 271

COCKBAIN, A. G., Classification of apatites, 143

COETZEE, F. J., Magnetite deposit, *Leolo mts.*, 236

COETZEE, F., Heavy minerals, *Witwatersrand*, 186

& Pegmatite intrusions in schist, *South Africa*, 253

COGNÉ, J., Augen gneisses, *Finistère*, 247

& BONHOMME, M., 257

COGULU, E., Glaucophane schists, *Turkey*, 158

& Petrography, *Turkey*, 322

& KRUMMENACHER, D., Age of rocks, *Anatolia*, 166

COHEN, A. J. *v.* REID, A. M., 299

COHEN, L. H., ITO, K., & KENNEDY, G. C., Phase relations in basalt, 287

& KLEMENT, W., Jr., High-low quartz inversion, 193

& KLEMENT, W., Jr., 193

COHEN-ADDAD, C., DUCROS, P., & BERTAUT, E. F., Structure of hydrogarnets, 267

COLBERTALDO, D. di, FURLA, E. di, & ROSSI, F., Magnetite deposit, *Val d'Aosta*, 185

COLEMAN, P. J. *v.* RICHARDS, J. R., 2

COLEMAN, R. G., Alpine ultramafic rocks, *United States*, 228

& LEE, D. E., BEATTY, L. B., & BRANNOCK, W. W., Eclogites, 159

& PETERMAN, Z. E., 238

COLIN, F. & ROCHE, A., Magnetization of lavas, *Aubrac mts.*, 162

COLLINS, A. T. W., LIGHTOWLERS, E. C., 251

COLLINSON, D. W., Remanent magnetism of sediments, 336

COLLOMB, P. & ELLENBERGER, F., Directional structures in schists, *Montagne Noire*, 237

COLOMB, E. *v.* CHAMLEY, H., 174

COLOMBO, G. *v.* SHAPIRO, I. I., 253

COLVILLE, A. A. & RIBBE, P. H., Structure of adularia, orthoclase, 269

& RIBBE, P. H., 179

COMERFORD, M. F., Erosion of meteorites, 123

COMPSTON, W., McDougall, I., & HEIER, K. S., Mesozoic basaltic rocks, 200

& BOFINGER, V. M., 81; HEIER, K. S., 295

CONDIE, K. C., Precambrian rocks, *Great Basin*, 74

& — Precambrian greywackes, *Wyoming*, 115

& — Fugacities during metamorphism, *Utah*, 155

CONKLIN, N. *v.* LEONARD, B. F., 277

CONNAN, J., Amino acids from sediments, 38

CONOLLY, J. R., Conglomerates, sandstones, siltstones, *New South Wales*, 155

CONQUÉRÉ, F., Devonian intrusions, *Finistère*, 318

COOKE, N., Mineralization, *Denbighshire*, 162

COOKE, R. U. *v.* CLARK, A. H., 2

COOMBS, D. S. v. ROEDDER, E., 34

COONEY, A. M. *v.* WILSON, R. B., 43

COOPER, J. A. & RICHARDS, J. R., Lead isotopes in magmas, *Hawaii & Japan*, 255

& RICHARDS, J. R., 2

COOPER, M. & LEAKE, J. A., Compton profiles of graphite, diamond, 249

COPPENS, R. & JURAIN, G., Uranium in granites, 35

CORAZZA, E. & SABELLI, C., Structure of syenite, 270

& GIUSEPPETTI, G., Lecontite, 181

& COCCO, G., 181

CORBETT, R. G. & GROWITZ, D. J., Water from coal mines, *Virginia*, 297

CORDILLO, C. v. ABELEDO, M. E. J. DE, 314

CORIN, F., Magmatic rocks, *Belgium*, 317

CORLETT, M. & EBERHARD, E., Plagioclases, (I), 51

& RIBBE, P. H., Plagioclases, (II), 52

& BAMBAUER, H. U., 52

CORLISS, J. B. *v.* GORDON, G. E., 198

CORNELIUS, K. D., Breccia pipe, *Queensland*, 100

CORNIL, P. *v.* DUCHESNE, J., 125

CORREIA NEVES, J. M., Nontronite, *Portugal*, 175

& Minerals from pegmatites, *Portugal*, 252

& LOPEZ NUNES, J. E., Herderite in pegmatite, *Mozambique*, 58

& Pegmatites, *Mozambique*, 220

& Pegmatitic feldspars, *Mozambique*, 220

CORRENS, C. W., Crystallography & petrology, (book), 172

CORTELEZZI, C. R., Partially altered stilbite, *Argentina*, 52

& Ammonia alum, *Argentina*, 56

COSTA, M. T. DA & DUTRA, C. V., Age of zircons, *Brazil*, 166

& DUTRA, C. V., 166

COUFAL, J. *v.* TRDLIČKA, Z., 57

COUFOVÁ, P. *v.* AREND, H., 104

COURTY, G., Oolitic Fe ores, *Normandy*, 19

Grain sizes in Fe ore, *Halouze*, 102

COURVILLE, S. *v.* JAMBOR, J. L., 131

COX, A. & DALRYMPLE, G. B., Statistics of geomagnetic reversals, 167

& DALRYMPLE, G. B., 337

COX, D. P., Au-bearing conglomerate, *Brazil*, 277

COX, K. G., Evolution of intrusive complex, *Rhodesia*, 236

MACDONALD, R., & HORNUNG, G., Composition of basalts, *Africa*, 148

PRICE, N. B., & HARTE, B., Crystals, minerals, & rocks, (book), 6

CRAIG, J. R. & KULLERUD, G., System Cu-Pb-S, 285

& NALDRETT, A. J., 285

CRAMPON, N., Saliferous formations, *Tunisia*, 154

CRATCHLEY, C. R. & EVANS, R. B., Geophysical surveys, *Uganda*, 164

CREMERS, A., Surface conductivity of clays, 263

CRESPI, R. & SCHIAVINATO, G., Tertiary intrusion, *Alps*, 231

CRESSY, P. J., *Jr. v. SHEDLOVSKY, J. P.*, 209
 CRIGHTON, J. M. *v. WHITE, W. B.*, 31
 CRISTANTIELLO, P. D., Graphite, *New York*, 338
 CROCKET, J. H., KEAYS, R. R., & HSIEH, S., Precious metals in chondrites, 125
 CROFTS, J. D. & MARSHALL, W. W., Synthesis of aluminosilicates, 29
 CROMMELIN, R. D., Volcanic sediment, *Netherlands*, 327
 — & PLAS, L. VAN DER, Viridine, *Netherlands*, 303
 CROWTHER, P. A. & DEAN, P. J., Optical properties of diamond, 76
 CRUËLÉ, R., Salt deposits, *France*, 280
 CRUFT, E. F. & GILES, D. L., Direct reading emission spectrometry, 260
 CRUCKSHANK, D. W. J. v. McDONALD, W. S., 178, 267; PANT, A. K., 267
 CRUZ, M., WHITE, J. L., & RUSSELL, J. D., Montmorillonite-s-triazine interactions, 263
 CUCHÝ, Z., LHOTÁK, Z., ŠUCHMAN, B., & UCHYTILOVÁ, A., AgCl single crystals, 104
 CURRIE, K. L., Shock metamorphism, *Saskatchewan*, 72
 — & SHAFIQULLAH, M., Alkaline carbonatite complex, *Ontario*, 65
 — & LAROCHELLE, A., 252
 CURTIS, C. D., Iron minerals in sediments, *Yorkshire*, 155
 CURTIS, G. H. v. MATTHEWS, W. H., 2
 CUSTER, R. L. P. v. HOOD, W. C., 336
 CUTHBERT, M. E. v. SHACKLETTE, H. T., 206
 CUTTER, I. B. v. RIGBY, E. B., 192
 CUTTITA, F., CLARKE, R. S., Jr., CARRON, M. K., & ANNELL, C. S., Composition of tektites, *Georgia*, 214
 — v. MAY, I., 87; MIESCH, A. T., 44; MILTON, C., 127

D'ACHIARDI, L. Q., Sandstones, *Savoy*, 70
 — v. SARTORI, F., 70
 DACHILLE, F. v. HRYCKOWIAN, E., 282; SIMONS, P. Y., 269
 DACHS, H., STOLL, E., & WEITZEL, H., Structure of hübnerite, 271
 DAGELAŠSKÝ, V. B., Alkaline pluton, *Kola peninsula*, 150
 DAHLBERG, E. C. & GRIFFITHS, J. C., Effects of sedimentation processes, 327
 DAHLEM, D. H. v. HEINRICH, E. W., 66
 DAIMON, N., TATE, I., HIRAO, M., & AMANO, T., Single crystals of fluor-phlogopite, 110
 DAKHIYA, L. M. v. BULAKH, G., 224
 DALLWITZ, W. B., GREEN, D. H., & THOMPSON, J. E., Clinoenstatite, *Papua*, 134
 DAL NEGRO, A., ROSSI, G., & UNGARETTI, L., Structure of meliphilane, *Norway*, 267
 DALRYMPLE, G. B., COX, A., DOELL, R. R., & GROMMÉ, C. S., Geomagnetic polarity epochs, 337
 — v. COX, A., 167
 DAMADARAN, V. v. DESHMUKH, K. K., 258
 DAMANY, H. v. SCHELLMAN, J., 161
 D'AMICO, C., Granodiorite, *Roncegno Valsugana*, 231-
 DAMINOVÁ, A. M., Binary granitoids, *Taymyr peninsula*, 149
 DAMON, P. E., K/Ar dating, *Arizona* & *Sonora*, 261
 — Magmatic crystallization, 291
 DAMRONGMANEE, T. v. GARDNER, L. S., 280
 DANACHEV, V. I. & KUZNETSOV, V. G., U in sediments, *Orenburg*, 37
 DANGEARD, L. v. LARSONNEUR, C., 240
 D'ANGLEJAN, B. F., Origin of marine phosphorites, *Mexico*, 244

D'ANS, J., Marine evaporites, 39
 — CO_2 in salt deposits, *Werra*, 339
 DANTIER, M., BROUSSE, R., & RUDEL, A., Granulites, charnockites, *Velay*, 247
 DARNLEY, A. G., S isotopes in sulphides, *Central Africa*, 187
 DARS, R. v. ALLÉGRE, C. I.
 DASGUPTA, D. R. v. BERNAL, J. D., 105
 DASGUPTA, H. C., Element correlation in magnetites, 311
 DAS GUPTA, S. P., SEN GUPTA, P. R., & MURTHY, M. V. N., Wall-rock alterations, *India*, 19
 DAUPHIN, J., DAUPHIN, S., CHATONIER, D., & VIALATTE, M. T., Iron equilibrium in mineral waters, 119
 DAUPHIN, S. v. DAUPHIN, J., 119
 DAUVILLIER, A., Age of meteorites, 300
 DAVIDENKO, I. V., Palaeotemperatures of granitoids, 50
 DAVIDSON A. & WYLLIE, P. J., Zoned & platy magnetite, 113
 DAVIDSON, C. F., Diamantiferous diatremes, *Czechoslovakia* & *Siberia*, 22
 — Kimberlites, *USSR*, 228
 — Xenoliths in kimberlite, 228
 DAVIDSON, D. F. v. CANNON, H. L., 206
 DAVIES, A. v. LUMSDEN, G. I., 88
 DAVIS, A. G., Minerals in Keuper Marl, *England* & *Wales*, 13
 DAVIS, E. A. & LIND, E. L., Mixed CdS-ZnS crystals, 251
 DAVIS, G. L. v. HART, S. R., 261
 DAVIS, J. B. & YARBROUGH, H. F., Bacterial oxidation of hydrocarbons, *Texas*, 206
 DAVIS, R. J., Double oscillation photographs, 169
 DAWSON, B., Covalent bond in diamond, 182
 — Covalent bond in Si, 182
 — & SANGER, P. L., Covalent bonding in Si, diamond, 182
 DAWSON, J. B., Kimberlite-carbonatite relation, 59
 — Geology of kimberlite, 228
 — Geochimistry of kimberlite, 228
 DE, S. K. & SHUKLA, R. K., Cooling coefficients of clay suspensions, 263
 DEAN, P. J. v. CROWTHER, P. A., 76
 DEAN, W. E., Jr. v. KIRKLAND, D. W., 71
 DEARMAN, W. R., Tectonic fluting structure, 67
 DEARNLEY, R., Boreholes, *Bristol*, 154
 — & DUNNING, F. W., Deformed pegmatites, basic dykes, *Hebrides*, 246
 DEBAT, P., Gneissic layers in schists, *France*, 73
 DEBRABANT, P., Lenticular marbles, *Massif Central*, 242
 DE BREUCK, W., Heavy minerals in sands, *Belgium*, 327
 DECHOW, E. & JENSEN, M. L., Sulphur isotopes in sulphides, *Central Africa*, 187
 DEGENS, E. T. v. DEUSER, W. G., 297
 DEGYAREVA, E. B., Crystallization of corundum, 8
 DEICHA, G. v. SELLA, C., 111
 DEINES, P., Isotopes in carbonate inclusions, *Pennsylvania*, 292
 DE KIMPE, C. R. & FRIPAT, J. J., Kaolinite from zeolites, 289
 DE KLERK, J., Elastic constants of α -ZnS, 75
 DELAFOSSE, R. v. ROUBAULT, M., 81
 DELAFOSE, M. F., Iron mineralization, *Chamouzon*, 242
 DELAMOYE, P., BILLIET, Y., MORGESTERN-BADARAU, I., & MICHEL, A., Substitution in Zn orthotitanite, 180
 DELANY, A. C. v. PARKIN, D. W., 42
 DELANY, AUDREY C. v. PARKIN, D. W., 42

DE LAPPARENT, A. F., BOULADON, J., SAINTÉ-SUZANNE, J. D., Iron ore, *Afghanistan*, 19
 DELHAL, J., Basement rocks, *Kasai*, 322
 DELIBRIAS, G. & DUTL, P., Calcareous formations, *Sahara*, 328
 — & ROCHE, J., Mesolithic finds, *Mur river*, 82
 DELL'ANNA, L. & GARAVELLI, C. L., Planchéite, *Elba*, 54
 — & QUAGLIARELLA, F., Jordanite, *Carrara*, 16
 DELWIG, L. F., Saline deposit, *Kansas*, 21
 DELTOUR-LITT, C. v. DUCHESNE, J., 125
 DEMANGEON, P., Minerals in bauxites, *Durance isthmus*, 242
 DEML, F., Current carriers in GaAs, 104
 DENAYER, M.-E., Ultrabasic lava, *Central Africa*, 227
 — Potassium transfer in lavas, *Congo*, 31
 DENHAM, P. v. LIGHTWOLERS, E. C., 251
 DENISENKO, V. K., Formation of dykes, *Kazakhstan*, 149, 152
 DENISKINA, N. D. v. KALININ, D. V., 286
 DENISON, R. E., HETHERINGTON, E. A., JONES & KENNY, G. S., Ages of basement rocks, *Oklahoma*, 1
 DENISOV, A. P. v. BELOLIPETSKIÍ, A. I., 133; GORDIYENKO, V. V., 136
 DENISOV, S. V., KOSHMAN, P. N., & YUGA T. A., Trace elements in Au, *Amur*, 113
 DENNIS, J. G. v. WALKER, C. T., 32
 DENSMORE, C. D. v. MUNNS, R. G., 118
 DE PIERI, R. v. CALLEGARI, E., 15, 50, 210
 DE POL, C., Anatexites, *Monte Ischietto*, 210
 DE QUERVAIN, F., Ni-bearing serpentinites, *Switzerland*, 274
 DERBENEVA, M. M., Rock reactions with solutions, 112
 DERIU, M., Andesitic rocks, *Sardinia*, 61
 — Petrology, *Montiferro* & *Planargia*, 62
 — & SPINELLI, L., Metamorphic rocks, *Sassari*, 73
 — & VINCI, A., Clays, *Botticino*, 12
 DESAI, C. C. v. PATEL, A. R., 335
 DESAUTELS, P. E., Mckelvite, 58
 DESBOROUGH, G. A., Origin of Ni ore, *Ontario*, 18
 — & CAMERON, E. N., Plagioclases, *Africa*, 269
 — & CARPENTER, R. H., Pyrrhotite, 106
 — v. BAXTER, J. W., 244
 DESCHAMPS, M., Siderolithic formations, *Allier*, 327
 DESCHODT, R., Viridine, *Belgium*, 216
 DESHMUKH, K. K., APTE, B. G., & DAMARAN, V., Determination of valency of Mn, 258
 DEUSER, W. G., Isotopes in foraminifera, *Red Sea*, 294
 — DEGENS, E. T., & GUILLARD, R. R., Isotopes in plankton, 297
 DEUTSCH, E. R. v. LILLY, H. D., 77
 DEUTSCH, S. & CHAURIS, L., Age of granitic gneisses, *Pays de Léon*, 82
 — PASTEELS, P., KRYLOV, A., SILIN, Y., & RAVICH, M., Age of rocks, *Antarctica*, 171
 — v. PICCIOTTO, E., I.; VOSTERS, M., 171
 DEVARAJU, T. C. & SADASHIVAIAH, M., Dolerite dykes, *Mysore*, 150
 DE VECCHI, G., Dyke rocks, *Alto Vicentino*, 232
 DEVIRTS, A. L. v. GROSSWALD, M. G., 16
 VINOGRADOV, A. P., 3
 DEWEY, J. F., Cordierite in granite, *Mayfield*, 156
 DIAROV, M., Boron in salt deposits, 203
 DICKENS, B. v. SÖDERQUIST, R., 26
 DICKERSON, D. R. v. JACKMAN, H. W., 23

WICKINSON, W. R., Andesite types, *Pacific Ocean*, 239

WIDIER, J. v. CHENEVOY, M., 331

WETRICH, R. V., Gem-rocks, 31

- Mineral localities, *Virginia*, (IV), 79

- Migmatites, 145

- Zircon in artificial magmas, 286

WETRICH, V., HUONDER, N., & RYBACH, L., Cu-As mineralization in marble, *Switzerland*, 185

WEITZ, R. S., Shatter cone orientation, *Gosses Bluff*, 215

WEI GIROLAMO, P. v. Scherillo, A., 240

WEŁAKTORSKI, N. L. & GALIBINA, E. A., Slate-ash structural materials, 8

- & LASN, I. I., Shale slag cement, 9

- v. KIILER, M. A., 8

WEIMAN, F. & MICHT, J., Rapakivi feldspar in granodiorite, *Flamanville*, 308

- v. BARTHOLOMÉ, P., 216

WEITRESCU, R. v. IANOVICI, V., 271

WEITRIJEVIĆ, M. & ČIRIĆ, B., Evolution of massif, *Serbia & Macedonia*, 333

WEGRIBIĆ, A., PETROVIĆ, B., ALEKSIĆ, V., DIVLJAN, S., BABOVIĆ, M., & KALENIĆ, M., Metamorphic complexes, *Serbia & Macedonia*, 333

WEITRIJEVIĆ, A. v. IANOVICI, V., 202

WEININ, J. L. v. MILTON, C., 127

WEIRAC, F. M. & EBERT, H., Age of micas, *Brazil*, 3

WEISTECH, A. v. PYTKOWICZ, R. M., 193

WEISTECH, S. v. PYTKOWICZ, R. M., 193

WEITLER, V. V. & BATREY, V. A., Wolframite, *Transbaikalia*, 224

WEITMAR, A. v. BULIAN, W., 189

WEIVLJAN, S. v. DIMITRIJEVIĆ, M., 333

- KARAMATA, S., 319

WEJDJEVIĆ, M. v. KARAMATA, S., 319

WELOUŠ, J. v. RICHTER, O., 104

WEITRIJEVIĆ, L. M., Distribution of fluorite, *Urals*, 22

WEITRIJEVIĆ, M. T. v. KLYAKHIN, V. A., 314

WEITRIJEVIĆ, A. V. v. BOLTEVA, L. I., 293

WEBERENZ, A. R. v. WYCKOFF, R. W. G., 116

WEBKINA, E. I. v. GROSSWALD, M. G., 168

WEVGRADOV, A. P., 3

WEBORETSON, N. L. & PONOMAREVA, L. G., Jadeite, *Urals & Balkhash*, 158

WEBORHOTOKOVA, E. S., ROMANOVICH, I. F., & SIDORENKO, G. A., Low-Fe enstatite, *Pamirs*, 46

WEBOROLYUBSKAYA, T. S. v. ANIKINA, L. I., 251

WEBORODNY, N. A. v. SKRIPCHENKO, N. S., 113

WEBOROTSVETOV, B. L. & BOGOSLOVSKAYA, E. I., System Zn_2SiO_4 - Fe_2SiO_4 , 9

WEODD, R. T., Jr., VAN SCHMUS, W. R., & KOFFMAN, D. M., Unequilibrated ordinary chondrites, 299

WEODIN, D. A., Microelements in trap rocks, *Kharayelov mts.*, 114

- & LEN'KIN, E. N., Classification of effusive basalts, *Siberia*, 145

- v. ARKHIPOVA, A. I., 150

WEOE, B. R., Lead isotopes in igneous rocks, *United States*, 34

- & TILLING, R. I., Lead in K-feldspar, plagioclase, *N. America*, 50

WEÖLL, R. R. v. DALRYMPLE, G. B., 337

WEOLEY, V. v. KMENT, V., 104

WEOLGUSHIN, S. S. & AMSHINSKIY, N. N., Uranium in granitoid intrusives, *Altai*, 36

WEOLLASE, W. A. v. BURGER, M. J., 271

WEOLOMANOVA, E. I. v. ZVYAGIN, B. B., 306

WEONATI, J.-R., PASCAL, B., & RENOUPEZ, A.-J., Granulometry, porosity, by X-ray methods, 169

WEONNAY, G. v. DONNAY, J. D. H., 224

WEONNAY, J. D. H. & WEONNAY, G., Water in spherulitic vaterite, 224

- v. TAKEDA, H., 178, 270

WEONNELLY, T. W., Genesis of growth twinning, 249

WEONOS, I. v. SAVUL, M., 116, 243

WEONOS, M. v. SAVUL, M., 116, 243

WEORFMAN, M. D., GORSHKOV, A. I., & TELESHOVA, R. L., Celadonite, *Khibiny*, 218

- ILYUKHIN, V. V., & Burova, T. A., Barsanovite, *Kola peninsula*, 252

- & SENDEROVA, V. M., Galena in pegmatite, *Khibiny*, 253

- & VARSHAL, G. M., Weathering of rinkolite, *Kola peninsula*, 222

- v. BALASHOV, YU. A., 116

WEORNELAS, W. v. BOQUET, J.-P., 191

WEORFEEVA, K. A. v. SKOROBAGOTOVA, N. V., 226

WEORFEEVY, V. A., LIFOVSKY, I. E., & MOVLIVY, V. A., Cast silicate products, 9

WEOROKHOV, I. L. v. SOBOLEV, R. N., 257

WEOROSH, V. M. v. VAKHRUSHEV, V. A., 183

WEOROSHENKO, YU. P., Formation temperatures of baryte, *Transbaikal*, 143

WEORR, J. V. N., Iron ores, *Fort Gouraud*, 279

WEOSTAL, J., Chrysoberyl-bearing pegmatite, *Moravia*, 63

WEOGGLAS, J. A. V. v. FOLINSBEE, R. E., 125

WEOUILLE, P. v. NICHOLAS, J., 172

WEOWELL, L. G. v. SMITH, J. V., 269

WEOWNING, R. A., Ground-waters in limestone, *Derbyshire & Midlands*, 119

WEODYEN, L. & PANOU, G., Mineral identification from decomposition products, 259

WEOKRABIN, I. E. v. BARKIN, P. V., 100

WEODGOSTINOV, P. v. RUSTACHEV, D. D., 189

WEOKHOKUPIJ, J. v. BUBÁKOVÁ, R., 258

WEOKRAKE, C. L. v. KNOPOFF, L., 261

WEODRECHSLER, M. & NICHOLAS, J. F., Lattice energy in cubic crystals, 249

- Equilibrium shape of cubic crystals, 249

WEODRECHSER-KADEN, F. K., Origin of granite, *Germany & Italy*, 325

WEODREVER, H. I. & JOHNSTON, R., High-lime silicate, *Skye & Scalpay*, 61

- Ultrabasic facies, 227

- Pieritic minor intrusions, 227

WEODRIFORD, M., Structure of doped Mg aluminates, 180

WEODROVENIK, M. v. KARAMATA, S., 319

WEODROWART, J., PATTORET, A., & SMOES, S., Vaporization of refractories, 24

WEODROZHIN, V. M. v. NIKOLAYEV, D. S., 296

WEODRYSDALL, A. R. & STILLMAN, C. J., Scapolite from dolomite, *Lusaka*, 220

- v. SIMPSON, J. G., 282

WEODUBINSKIY, A. YA., MATSENKO, N. A., & MOSKALEVA, V. N., Buried skarn zone, *Ciscaucasia*, 246

WEODUBOIS, J., Automatic sample exchanger for diffractometer, 258

- X-ray fluorescence of thin layers, 259

- v. GOUDER DER BEAUREGARD, C., 192

WEODUBOIS, R., Granites, *Calabria*, 318

WEODUBROVIN, A. S. v. RUSAKOV, L. N., 8

WEODUCHAFOUR, P., Aluminium in soils, 13

WEODUCHESNE, J., CORNIL, P., READ, M., & DELTOUR-LITT, C., Organic C in meteorites, 125

WEODUCHESNE, J. C., Plagioclase, *Norway*, 219

- Determination of Sr, Rb, 259

- v. BARTHOLOMÉ, P., 268; ROELANDTS, I., 259

WEODUCROS, P. v. COHEN-ADDA, C., 267

WEODEDEK, A., Crystalline complexes, *Bohemia*, 62

- Crystalline complexes, 332

- & KOPECKÝ, L., Crystalline complexes, 62

- v. BERNARD, J. H., 272

WEODUDICH, E., Jr. & SIKLOSI, L., Trace elements in bauxite, *Hungary*, 295

WEODUDKIN, O. B., Spectra of rare-earth minerals, 289

- ZAK, S. I., & GORSTKA, V. N., Alkaline intrusions, *Khibiny & Synnýr*, 234

WEODUDÝKINA, A. S. v. PLOSHKO, V. V., 7; SEMENOV, E. I., 53

WEODUFF, P. M. D., HALLAM, A., & WALTON, E. K., Cyclic sedimentation, (book), 88

WEODUKE, M. B. & SILVER, L. T., Eucretes, howardites, mesosiderites, 121

- v. FINKELMAN, R. B., 257

WEODULHUNTY, J. A., Alkaline lavas, *New South Wales*, 64

WEODULLIER, B. v. KOSZTOLANYI, C., 273

WEODUMBLETON, M. J., Red clays, *Keuper Marl, Africa & England*, 13

WEODUNHAM, A. C., Igneous rocks, *Rhum*, 230

WEODUNNING, F. W. v. DEARNLEY, R., 246

WEODUPUY, C., Alkali metals in volcanic rocks, *granodiorite, Tuscany & Elba*, 34

- Composition of volcanic rocks, *Causses & Bas-Languedoc*, 230

WEODURAND, B. & GAGNY, C., Lava flows, *France*, 61

WEODURAND, G. L. & GUILLET, B., Age of peat, *Beillard*, 257

WEODURBIN, D. R. v. EHMANN, W. D., 207

WEODURIF, A. v. MASSE, R., 94

WEODURRANCE, E. M., Determination of preferred orientation, 3

WEODURY, G. H., Geochronology, *Australia & New Guinea*, 81

WEODUSMATOV, V. D., EFIMOV, A. F., ALKHAZOV, V. YU., KAZAKOVA, M. E., & MUMYATSKAYA, N. G., Tienshanite, *Tien-Shan*, 226

- & SEMENOV, E. I., Stillwell, *USSR*, 53

WEODUTCHER, R. R. v. HRYCKOWIAN, E., 282

WEODUTIL, P. v. DELIBRIAS, G., 328

WEODUTRA, C. V., Age of zircons, *Desemboque*, 166

- Age of zircons, *Poços de Caldas*, 166

- & COSTA, M. T. DA, Age of zircons, *Minas Gerais*, 166

- & GUIMARÃES, D., Age of alkaline massif, *Itatiaia*, 166

- v. COSTA, M. T. DA, 166; SAD, J. H. G., 167

WEODWORNIK, E. J. v. MINTON, C., 127

WEODYACHKOVA, I. B. v. TUGARINOV, A. I., 40

WEODYER, H. B. v. HAWLEY, C. C., 272

WEODZHHRASHYAN, R. T., Accessory elements & minerals, *Bazum mts.*, 7

WEODZOTSENIDZE, G. S., Volcanism & sedimentation, 6

WEADE, K. E., FAHRIG, W. F., & MAXWELL, J. A., Crystalline shield rocks, *Canada*, 74

- v. FAHRIG, W. F., 115

WEALES, H. V., Ni-Cu ores, *Rhodesia*, 186

- Reflectivity of Au-Ag alloys, 258

WEARDLEY, R. P. v. BOUTLON, J. F., 170

WEASTON, A. J. & HEY, M. H., Minor elements in enstatite chondrites, 122

- Analysis by, 218

- v. HEY, M. H., 210, 300

WEEBERHARD, E., Synthesis of plagioclase, 29

- v. BAMBAUER, H. U., 52; CORLETT, M., 51

WEEBERHARDT, P. v. EUGSTER, O., 208

WEEBERT, H. v. DIRAC, F. M., 3

WEEBHARDT, G. v. WELTE, D. H., 203

WECKERMANN, H. von, Strontium, barium in carbonatites, *Alnö*, 36

- Pyroxenes, *Sweden*, 47

WEESTRONTIUM, barium in rocks, *Alnö*, 115

— Wollastonite in carbonatites, *Alnö*, 145
 — Sövite pegmatite, *Alnö*, 146
 — Kimberlites, *Sweden, Africa, & USSR*, 228
 — Magmatic intrusion, 324
 ECKSTEIN, J., BOHUN, A., HUŠEK, M., & WACHTL, Z., Alkali halide single crystals, 104
 — v. BOHUN, A., 104
 EDEL'SHTEYN, I. I., Nickel mineralizations, 275
 EDGAR, A. D., α - β -spodumene transition, 194
 — Zoned inclusion, *Ontario*, 330
 — & NOLAN, J., System albite-nepheline-
 acmite-diopside- H_2O , 30
 — & PIOTROWSKI, J. M., Albites, 29
 EDGE, R. A., Ion-exchange chromatography
 of rocks, 172
 EDWARDS, W. N., PHEMISTER, J., &
 HARRISON, R. K., Geology, *Nottinghamshire*, 147
 ÉFENDIEV, G. K., ABDULLAYEV, Z. B., &
 BABAYEVA, E. E., Scandium in ultrabasic
 rocks, *Azerbaijan*, 200
 — v. ZUL'FUGARLY, N. D., 225
 EFIMOV, A. F. v. DUSMATOV, V. D., 53, 226
 EFREMOV, S. V., INDICHENKO, L. N., &
 BELOUsov, G. E., Granitoids, *Kazakhstan*, 7
 EGAWA, T., Volcanic ash soils, *Japan*, 264
 EGER, D. T. v. KEMP, W. C., 80
 EGGLESTON, R. A. & BAILEY, S. W.,
 Dioctahedral chlorite, 14
 EGGMANN, H. v. NISSEN, H.-U., 51
 EGLINTON, G., Organic geochemistry, 32
 EGOROV, I. N., GAMALEYA, YU. N., &
 MINTS, M. V., Zircon in rocks, *Ulkhan*, 200
 EGOROV, L. S., Phlogopite-olivine rocks,
Maymecha-Kotuy, 234
 — Alkaline ultrabasic rocks, *Maymecha-*
Kotuy, 234
 EHmann, W. D. & DURBIN, D. R., Silicon in
 meteorites, standard rocks, 207
 — & LOVERING, J. F., Mercury in meteorites
 & rocks, 123
 — & TANNER, J. T., Antimony in meteorites,
 207
 — v. BAEDECKER, P. A., 43; LIEBERMAN,
 K. W., 207; SCHMITT, R. A., 209; TANNER,
 J. T., 207
 EHRLINGER, H. P., III, BOHOR, B. F.,
 CAMP, L. R., & KHANDELWAL, S., Light-
 weight bricks, 189
 ERSCHÜTZ, M., HERMON, E., & SHTRIKMAN,
 S., Cation valencies in stannite, 27
 — — Transition metal thioniobates, 182
 EICHHOFF, H. J., Age determinations, 259
 EICHLER, R., Deuterium in waters, *Alps*, 40
 — Deuterium in rain & ground-waters, 40
 EINAUDI, M. T. v. MARVIN, U. B., 153
 EK, C. & PISSART, A., Precipitation of
 calcite, 107
 ELCOMBE, M. M., Lattice dynamics of
 quartz, 182
 ELDER, J., Self-propulsion of continents, 253
 ELDERFIELD, H. v. CHESTER, R., 224
 EL GORESY, A., Odessa meteorite, 211
 — & OTTEMANN, J., Gentnerite from
 meteorite, 126
 EL-HINNAWI, E. E., Iron ores, *Egypt*, 101
 — v. SCHULZE, E. G., 62
 EL'IANOV, A. A., PETROVA, M. G., &
 SOLOMONIDA, N. L., Kimberlites, *Aldan*
shield, 234
 ELINA, N. A. v. BELOLIPETSKII, A. P., 133
 ELINSON, M. M. & POLYKOVSKII, V. S.,
 Quartz vein formation in skarns, *Tien-*
Shan, 205
 ELISEEVA, G. D. v. ORSA, V. I., 198
 ELLENBERGER, F. v. COLLOMB, P., 237
 ELLIOTT, I. v. TOOMS, J. S., 112
 ELLIOTT, J. C. & YOUNG, R. A., Single
 crystals of hydroxyapatite, 192
 ELLIS-GRAFFYDD, I. D. v. BROWN, M. J. F., 1
 ELLISTON, P. R. & TROUP, G. J., Anti-
 ferromagnetic resonance in α - Fe_2O_3 , 252
 ELLY, R. v. KAPLAN, G., 1
 EL-TAWIL, S. Z. v. HUSSEIN, M. K., 26
 EMBRY, P. G. v. KOSTOV, I., 261
 EMSLIE, A. G. v. ARONSON, J. R., 80
 ENBYSK, B. J. v. BUDINGER, T. F., 168
 ENDO, M., Sphalerites, *Hitachi mine*, 98
 — Tellurium minerals, *Izu peninsula*, 99
 — Sphalerites, *Japan*, 140
 ENDO, Y. & SUNAGAWA, I., Morphology of
 quartz, pyrite, 334
 ENGEL, C. v. LOVERING, T. S., 206
 ENGELHARDT, W. v., Formation of crater,
Ries, 302
 ENGLAND, J. L. v. BELL, P. M., 87
 ENGSTRAND, L. v. SELLSTEDT, H., 3
 EPATKO, YU. M. v. BELEVTSOV, YA. N., 201
 EPPLER, W. F., Old brilliant-cut diamonds,
 31
 ÉPSHTEIN, G. YU. v. ROZENTSVIT, A. O., 20
 EPSTEIN, S. & TAYLOR, H. P., Jr., Oxygen
 isotopes in minerals, rocks, 87
 ERBENBURG, A. M. v. PESCHCHEVITSKIY, B. I.,
 118
 ERGUN, S., Optical anisotropy of graphite,
 251
 ERHART, H., Aluminium accumulation in
 plants, 263
 — Changes in geochemical balance, 294
 ERICH, A., Petrography, *Bernstein*, 332
 ERICKSEN, A. J., Jr., Deposition tempera-
 tures of calcite, *Mississippi valley*, 21
 ERICKSEN, G. E., FAHEY, J. J., & MROSE,
 M. E., Humberstone, *Chile*, 131
 ERICKSON, K. P. v. NOLD, J. L., 84
 ERICSON, D. B. v. GLASS, E., 339
 ERLANK, A. J. v. AHRENS, L. H., 132;
 TAYLOR, S. R., 303
 ERMakov, V. I., Gas zoning in aquifer,
Ciscaucasia, 297
 — Water & gas compositions, *Caucasus*, 297
 ERMakov, V. V. v. KOVAL'SKIY, V. V., 206
 ERMOLAEV, N. P. & SHIDIKOVA, A. P.,
 Behaviour of U, Th during metamorphism,
 296
 — & ZHIDIKOVA, A. P., Uranium in meta-
 morphism, *Aldan shield*, 40
 ERMOLENKO, N. N., SHARAI, V. N., SHALIMO,
 Z. N., & RUSSETSKAYA, E. P., Crystalliza-
 tion of glasses, 8
 ERNST, W. G., Amphiboles, (book), 260
 ERSHOV, V. M., SEMENOVA, N. N., &
 ERSHOVA, V. G., Lead isotopes in galena,
Urals, 22
 ERSHOV, V. V. v. POPOVA, G. B., 106
 ERSHOVA, V. G. v. ERSHOV, V. M., 22
 ESIKOV, A. D. v. TOMSON, I. N., 33
 ES'KOVA, E. M., ZHABIN, A. G., &
 MUKHITDINOV, G. N., Aeschynite, *Vish-*nev'ye mts.**, 130
 ESPENSHADE, G. H. & BOUDETTE, E. L.,
 Geology, petrology, *Maine*, 151
 ESPOURTEILLE, F., FOGLIERINI, F., &
 LAGNY, P., Lead-zinc ores, *Italy*, 273
 ESQUEVIN, J., Clay mineral sequences,
Aquitaine, 37
 ESSENE, E. J., Cymrite, *California*, 221
 ESSON, J., Analysis by, 194
 ESTÉOLE, J., Fibrous product from gel, 111
 ESTEP, P. A. & KARR, C., Jr., Infrared
 spectrum of dawsonite, 224
 EUGSTER, H. P., JONES, B. F., & SHEPPARD,
 R. A., Magadiite, kenyaita, *Kenya, Oregon*,
 & *California*, 129
 — & SKIPPER, G. B., Gas equilibria, 87
 EUGSTER, O., EBERHARDT, P., & GEISS,
 J., Krypton in chondrites, 208
 EUWEMA, R. N. v. LANGER, D. W., 77
 EVANS, B. J., GHOSH, S., & HAFNER, S.,
 Orthopyroxenes, 267
 EVANS, H. T., Jr. v. STAPLES, L. W., 129
 EVANS, R., Evaporite, *Nova Scotia*, 153
 EVANS, R. B. v. CRATCHLEY, C. R., 164
 EVANS, R. K., Geology, *Shire Highlands*, 23
 EVANS, T., Pressure effects on plasticity,
 — v. WILD, R. K., 335
 EVANS, W. H., Determination of Al, Fe, 85
 — Determination of Mg, 259
 — & SERGEANT, G. A., Determination of Fe
 85
 EVERDINGEN, R. O. v. RUTTEN, M. G.,
 317
 EVZIKOVA, N. Z. & LI'CHENKO, L. N.,
 Origin of carbonatite, *Siberia*, 326
 EWART, A., Water pressure in magmas, 315
 — & STIPP, J. J., Volcanic rocks, *New*
Zealand, 325
 EWING, M. v. BUNCE, E. T., 165
 FABRIÈS, J., Hornblendes, *Sierra Morena*,
 217
 FAHEY, J. J. v. ERICKSEN, G. E., 131
 FAUST, G. T., 307
 FAHRIG, W. F., EADE, K. E., & ADAMS,
 J. A. S., Radioactive elements in shield
 rocks, *Canada*, 115
 — v. EADE, K. E., 74
 FAHY, J.-C. v. BUFFIÈRE, J.-M., 321
 FAIRBAIRN, H. W. v. HURLY, P. M., 292
 MOORBAUGH, S., 113
 FALKE, H., Boron, dolomite in sediments,
Kreuznach, 38
 FANFANI, L. & ZANAZZI, P. F., Secondary
 minerals, 94
 — — Baranite, 181
 — v. COCCO, G., 16, 271
 FANG, J. H., ROBINSON, P. D., CERVEN, J. F.,
 & WOLF, L. A., Computer programme for
 cell parameters, 84
 FARIA, F. L. de = LIMPO DE FARIA, F.
 FARQUHAR, R. M. v. HAMILTON, E. I., 261
 FAUCHERRE, J. v. MICHAUD, G., 38
 FAULKNER, D. v. AXON, H. J., 124
 FAUQUIER, D., Metamict columbontantalate,
 142
 FAURE, D. v. KAPLAN, G., 1, 165
 FAURE, G. v. JONES, L. M., 296
 FAUST, G. T. & FAHEY, J. J., Serpentinite
 group minerals, 307
 FAVRETO, L., Fayalite, *Le Cave*, 215
 — v. LONG, G., 295
 FAWCETT, J. J., RUCKLIDGE, J. C.,
 BROOKS, C. K., Geological expedition
Greenland, 60
 FAYARD, M. v. JAVOY, M., 38
 FAZYIYEV, A. R. v. KHASANOV, A. KH., 150
 FEDIUK, F. & MÍSAŘ, Z., Andalusite orienta-
 tion in metamorphism, 332
 FEDOROV, F. I., Elastic waves in crystal-
 (book), 88
 FEDOROVSKY, V. S. v. KORIKOVSKY, S. P.,
 149
 FEDOSEYEV, A. D. v. KORYMKOVA, E. N.,
 FEDOTOVA, M. G., Retgersite, *Allarechen-*

FERRARA, G. & GRAVELLE, M., Age of rocks & minerals, *Sahara*, 255

FERRARESSO, G., Thermoluminescence of clay minerals, 89

FERRARIS, G. v. CALLERI, M., 16

FERREIRO, V. J. & ROMERO, R. G., Uranium-copper ores, *Argentina*, 273

FIALA, J., Garnet peridotites, *Bohemia*, 62

ICK, L. J., Offshore prospecting for Sn, 187
— Tin pegmatites, *Rhodesia*, 276

FIELDER, G., Lunar volcanoes, 69
— Isolating lunar materials, 81
— & WAGNER, R., Analysis of montmorillonite, 174

FILICE, A. L., Lunar surface material, 253
— v. ADAMS, J. B., 251

FILIP, J. v. JINDRA, J., 104

FILOPOVICH, I. Z. v. GAVRILIN, R. D., 320

FILONENKO, N. E. v. BELYAYEV, G. S., 8

FINGERLAND, A. v. BUBÁKOVÁ, R., 258

FINKELMAN, R. B. & DUKE, M. B., Mounting small particles, 257

FINNEY, J. J. v. KUMBASAR, I., 95

FIorentini-Potenza, M. & GALASSI, G. A., Calculation of Niggli norms, 170

FIRMAN, E. L., Radioactivity in meteorites, 209

FIRMAN, P. E. v. FIRMAN, R. J., 93

FIRMAN, R. J. & FIRMAN, P. E., Medieval bricks, *England*, 93

FIRSOV, L. V., Age of granitoids, *Sakhalin*, 82
— Age of intrusive rocks, *Kurile*, 82
— Age of granitoids, *Taygonos peninsula*, 83
— Age of phlogopite, *Aldan*, 256

FISCHER, K. & ZEHME, H., Microcline, 15

FISHER, D. E., Origin of Xe in meteorites, 208
— Tritium in meteorites, 212
— v. BERKEY, E., 124

FISHMAN, M. V. v. GOLDIN, B. A., 227

FITCH, F. J. & MILLER, J. A., Age of Whin sill, 2
— v. STURT, B. A., 2

FITZGERALD, A. C., GRAHAM, R. J., GROSS, W. H., & RUCKLIDGE, J. C., Significance of Au/Ag ratios, *Quebec*, 277

FLANDERS, P. J., Metamagnetic effects in hematite, 162

FLANIGEN, E. M., BRECK, D. W., MUMBACH, N. R., & TAYLOR, A. M., Synthetic emeralds, 31

FLEET, M. E. L., Determination of B, 170

FLEISCHER, M., Fluorine in ground-waters, *United States*, 207
— v. FRONDEL, J. W., 145; SCHALLER, W. T., 307

FLEISCHER, R. L., PRICE, P. B., & WALKER, R. M., Nuclear fission tracks in meteorite, 124
— — Charged-particle tracks, 261
— — — & MAURETTE, M., Charged-particle tracks in meteorites, 208
— — — & MORGAN, G., Cosmic ray tracks in meteorites, 208

FLEROV, G. B. v. VOLYNETS, O. N., 320

FLINN, D., Metamorphic rocks, *Shetland*, 73

FLOOR, P. v. TEX, E. DEN, 247

FLORENSKIY, K. P. & VDOVYKIN, G. P., 12th meteorite conference, 42

FLORES, G., Age of rocks, *Mozambique*, 165

FLORÉ, O. W., Polymorphism of $AlPO_4$, 192

FLOROVSKAYA, N. V., TEPLITSKAYA, T. A., ZEZN, R. B., & OVCHINNIKOVA, L. I., Hackmanite, *Uvozero & Khibiny*, 220

FLOYD, P. A., Element distribution in granite, *SW England*, 35
— Fluorine in metamorphosed hornfelses, 40

FOËX, M. v. VEGNOUX, A.-M., 191

FOGLIERINI, F. v. ESPOURTEILLE, F., 273

FÖHN, P. & RYBACH, L., Radioactivity of granite, *Aar*, 293
— — & PEACOR, D. R., Johannsenite, *Italy*, 14

FREI, V., α - & β -Quartz, (I, II), 335

FRENZEL, G. & OTTEMANN, J., Sulphide minerals, *Fiji*, 274
— v. BLOSS, F. D., 84

FREUND, F., Dehydration of gibbsite, 11

FREUNDLICH, W. & PAILLERET, P., System Mo-V-O, 191

FREY, J. D., Geology, stratigraphy, tectonics, *Switzerland*, 247

FREYBURG, E., Bleached zones in sandstone, *Thuringia*, 243

FRIDMAN, A. I. v. KRAVTSOV, A. I., 298

FRIEDEL, R. A. v. LEFELHOZ, J. F., 117

FRIEDLANDER, C. v. AUMENTO, F., 52

FRIEND, P. F., Clay fractions from red beds, *Catskill mts.*, 13

FRIKH-KHAR, D. I. v. VOLYNETS, O. N., 320

FRIPIAT, J. J. v. DE KIMPE, C. R., 289

FRTSICHE, J., Analysis by, 162

FRITZ, J. N. v. MCQUEEN, R. G., 250

FRITZ, P. v. FONTES, J. C., 176

FROHBERG, M. H. v. HAREIS, D. C., 140

FRONDEL, C., Voltzite, *New Jersey*, 57
— Quartz twin, *Brazil*, 220
— & MARVIN, U. B., Lonsdaleite, 225
— v. ITO, J., 29, 108, 109, 286; KLEIN, C., 56; SMITH, M. L., 314

FRONDEL, J. W., FLEISCHER, M., & JONES, R. S., Uranium & thorium minerals, 145

FROST, M. J., View Hill meteorite, 43
— Lamellae in Gibeon meteorite, 43
— Cutting meteorites, 123

FROUNFELKER, R. E. v. WACKMAN, P. H., 76

FRUTH, I. & MAUCHER, A., Trace elements, S isotopes, in sphalerite, *Italy*, 273

FRY, H. M. v. ATWOOD, D. K., 142

FU, PING-QUI, Wavelite, 181

FUCHS, L. H. v. OLSEN, E., & HENDERSON, E. P., Brianite, panethite in meteorite, 227

FÜCHTBAAUER, H. & GOLDSCHMIDT, H., Calcium in dolomites, *Libya & Germany*, 57

FUENTE, I. DE LA, Manganese oxides, *Philippines*, 279

FUGE, R., Determination of V, 85
— Determination of Cr, 171

FUJI, N. v. KANAMORI, H., 250

FUJI, T., Order-disorder in muscovite, 95
— Critical point of binary systems, 284

FUJISAWA, H., Transition layer of mantle, 339
— v. AKIMOTO, S.-I., 194

FUJIWARA, S., NAGASHIMA, K., & CHIBA, M., Zircon, *Japan*, 132
— v. SUGITANI, Y., 94

FULLAGAR, P. D., BROWN, H. S., & HAGNER, A. F., Wall-rock alteration, *North Carolina*, 290

FULWEILER, R. E. v. HOAGLAND, A. D., 98

FUNASAKA, W., ANDO, T., & TOMIDA, Y., Determination of Zr, 86

FUNK, H., PODOSEK, F., & ROWE, M. W., Xenon in meteorites, 213
— & ROWE, M. W., Xenon from irradiated Ba, 300

FUNKHOUSER, J., KIRSTEN, T., & SCHAEFFER, O. A., Rare gases in meteorite, 301

FURBISH, W. J., Chloritoid, *North Carolina*, 159

FURIA, E. DI v. COLBERTALDO, D. DI, 185

FUSE, K. v. HAYATSU, R., 213

FYFE, W. S., Glauconophane schists, *Pacific coasts*, 246
— & ZARDINI, R., Metaconglomerate, *California*, 333
— v. BURNS, R. G., 87; CARMICHAEL, I. S. E., 76

GABERT, G. & VINKEN, R., Scheelite, *Korea*, 20, 276

GABIS, V. & KARAKAS, E., Preferred orientation of diaspore, 55

GABLE, D. J. v. SIMS, P. K., 75

GAGNY, C. v. DURAND, B., 61

GAIR, H. S., Geology, *Victoria Land*, 66

GALAKHOV, F. Ya. v. TOROPOV, N. A., 7

GALASSI, G. A. v. FIORENTINI-POTENZA, M., 170

GALDOBINA, L. P. v. SOKOLOV, V. A., 321

GALE, N. H., MOORBATH, S., SIMONS, J., & WALKER, G. P. L., Age of intrusive rocks, *Iceland*, 255

GALETSKI, L. S., Genthelvite-cassiterite mineralization, 138

GALIBINA, E. A. v. DILAKTORSKI, N. L., 8

GALIMOV, E. M., Carbon isotopes in soil CO_2 , 41

GALITSYN, M. S., GALITSYNA, E. I., & SLAVYANOVA, L. V., Strontium in waters, *Caspian plain*, 297

— & SLAVYANOVA, L. V., Rubidium in subsurface waters, *Caspian depression*, 296

GALITSYNA, E. I. v. GALITSYN, M. S., 297

GALLAGHER, M. J., Determination of Mo, *Fe*, Ti, 171

GALLAS, M. v. ZBOŘÍLEK, A., 104

GALLI, E., Structure of perrierite, 178

— & GOTTAUDI, G., Structure of stilbite, *Iceland*, 179

— v. ALIETTI, A., 231

GALLI, M. & BEZZI, A., Porphyritic dyke, *Genoa*, 246

GALSTYAN, R. S. v. KAZARYAN, A. G., 142

GALVAN, J., GARCIA-VICENTE, J., ALONSO, J. J., & CARVALJAL, H., Ferruginous concretions, *Guadalajara*, 154

GALVÁN GARCIA, J. & ALONSO PASCUAL, J., New mineral localities, *Spain*, (I), 162

GAMALEYA, YU. N. v. EGOROV, I. N., 200

GAMBLE, J., Analysis by, 49

GANAPATHY, R. v. CLARK, R. S., 122

KURODA, P. K., 208

GANGULI, D. & SAHA, P., System Al_2O_3 - SiO_2 , 28

GARAVELLI, C. L. v. DELL'ANNA, L., 54

GARAYCOCHEA-WITTKO, I. v. BUEHRER, M. J., 271

GARCIA, J. G. = GALVÁN GARCIA, J.

GARCIA-VICENTE, J. v. GALVAN, J., 154

GARD, J. A., NaF action on calcite, 80

— v. BENNETT, J. M., 95

GARDNER, L. S., DAMRONGMANEE, T., & SMITH, R. M., Manganese ores, *Thailand*, 280

— & SMITH, R. M., Fluorite, *Thailand*, 280

GARFUNKEL, Z. & KATZ, A., New magmatic structures, *Israel*, 156

GARG, N. K., Myrmekite in charnockite, *Nigeria*, 59

GARNER, E. L. v. ROSHOLT, J. N., 294

GARNETT, R. H. T., Tin ore controls, *Malaysia & Cornwall*, 187

GARRELS, R. M., Genesis of ground-waters, 87

GARSON, M. S., Carbonatites, *Malawi*, 234

— v. BLOOMFIELD, K., 235

GARTMANOV, V. N. v. ALIMOVA, I. A., 5

GASPARI, P., 'Cratonic forms', *Campania*, 240

GASPERIN, M., Tungsten bronze, 16

GASS, I. G., Ultrabasic volcanic assemblage, *Cyprus*, 227

GASSE, U., Heavy minerals in flysch deposits, *Alps*, 154

GAST, P. W. v. ABDEL-MONEM, A., 168

GASTUCHE, M.-C., Planchéite, shattuckite, *Congo*, 53

GATES, R. M., Amphibolites, *Connecticut*, 74

GAULT, D. E. v. CHAPMAN, D. R., 213

GAUTHIER, J., Zoned limestone, *France*, 13

— v. FONTES, J. C., 176

GAUTIER, A. & GEETS, S., Heavy minerals in sediments, *Central Africa*, 328

GAVELIN, S. & RUSSELL, R. V., Sedimentary structures, *Sweden*, 155

GAVRILIN, R. D. & FILIPOVICH, I. Z., Palaeozoic intrusions, *Tien-Shan*, 320

GAVRILOV, A. A., Tuffaceous mudstone, *Ural*, 155

GAY, P., SEAGER, A. F., TAYLOR, H. F. W., & ZUSSMAN, J., 5th General Meeting, *I.M.A.*, 260

— & ROY, N. N., K-Ba feldspars, (III), 309

GAYER, R. A. & WALLIS, R. H., Metamorphic formations, *Spitsbergen*, 329

GAZIZOV, M. S. v. GRINENKO, V. A., 202

GAZZI, P., Area-volume relation from granulometry, 169

— Minerals in sandstone flysch, *Apennines*, 242

— Stratigraphy of sandstone flysch, *Apennines*, 242

Gazzoni, G. & RIGAULT, G., Determination of U & Th, 171

GEAKE, J. E. & WALKER, G., Meteorite luminescence, 254

GEAR, A. E. v. BASTIN, J. A., 254

GEETS, S. v. GAUTIER, A., 328

GEFFROY, J. v. AGRINIER, H., 139, 140

GEHLEN, K. VON, Sulphur isotopes in ores, *Germany*, 33

GEIJER, P., Fe-sand in quartzite, *Sweden*, 157

GEIS, H.-F., TiO_2/Fe in magnetite-ilmenite ores, *Norway*, 59

GEISS, J. v. EUGSTER, O., 208

GEISSMAN, T. A. v. MURDOCH, J., 131

GEJVALL, N.-G. v. SELLSTEDT, H., 3

GELLER, S., Structure of garnets, 266

GENKIN, A. D., MURAVEVA, I. V., & TRONEVA, N. V., Zvyagintsevite, *Noril'sk*, 225

GENTRY, R. V., Energy distribution in explosions, 42

GERASIMOVSKIY, V. I. & KARPUSHINA, V. A., Niobium, tantalum in nepheline syenites, 35

— VOLKOV, V. P., KOGARKO, L. N., POLYAKOV, A. I., SAPRIKINA, T. V., & BALASHOV, YU. A., Geochemistry, *Lovozero*, (book), 6

GERHARZ, R., Reflectance spectra of minerals, 58

GERLING, E. K., SHUKOLYUKOV, YU. A., TOLSTIKHIN, I. N., & ASHKINADZE, G. SH., Argon in uranium minerals, 167

— v. SARKAR, S. N., 82

GERMAN, A. K., Origin of pyrite deposits, *Urals*, 99

GERSTENKORN, H., Early history of Moon, 254

GEVORK'YAN, S. V., PLATONOV, A. N., & POVARENYYKH, A. S., Spectrum of zincite, 311

GHOSE, N. C., Trace elements during metamorphism, 39

GHOSE, S. & HAFNER, S., Mg & Fe in orthopyroxenes, 267

— v. EVANS, B. J., 267

GHOSH, A. K., Exploration of Cu, *Singhbhum*, 96

— v. BHATTACHERJEE, S. B., 112

GIAMMETTI, F., Serpentine, *Apennines*, 61

— Ophiolitic rocks, *Apennines*, 62

GIBB, T. C. v. BANERJEE, S. K., 76

GIBBON, D. L. & TUTTLE, O. F., System $\text{FeO}-\text{Fe}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$, 29

GIBBS, G. V. v. RIBBE, P. H., 266

GIBERG, P. v. APRAHAMIAN, J., 328

GIELISSE, J., Growth of diamond & boron nitride, 334

GIJSEN, A. A. v. D., Iron oxide-hydrate particles, 77

GIFFORD, A. C. v. JONES, D. L., 337

GILAT, J. v. AMIEL, S., 43

GILDE-FARKAS, M. v. SZÁNTÓ, F., 176

GILES, D. L. v. CRUFT, E. F., 260

GILETTI, B. J., Isotopic geochronology *Montana & Wyoming*, 261

GILLARDEAU, J. & CHARPIN, P., Copper fluoride, 96

GILDERMAN, E., Mineralization, *New Mexico*, 272

GILLET, Y. v. BARIAND, P., 54

GILLOT, J. E., Clay in engineering geology (book), 261

GINZBURG, I. V., Clinoholmquistite, *Siberia*, 130

— Classification of pyroxenes, 217

GIORDANO, J. v. VERGNOUX, A.-M., 191

GIRESSE, P., Ferruginous ooliths, *Gabon*, 102

GIRIN, YU. P. v. RONOV, A. B., 36

GIROD, M., Garnet pyroxenite, *Sahara*, 47

GRY, L. v. ROBLOT, M.-M., 294

GIUŞCĂ, D., IONESCU, J., & UDRESCU, C., Geochemistry of Be, 199

GIUSEPPETTI, G. v. CANNILLO, E., 267

CORAZZA, E., 181

GILVARRY, J. J., Nature of lunar surface, 339

GLACON, J., Minerals, *Algiers*, 18

GLADKIKH, V. S. & CHERNYSHEVA, V. I., Rare elements in suboceanic extrusives, 35

— & SOLOMINSKAYA, B. A., Melanocratic olivine nephelinite, *Kusnetsk Altay*, 233

GLADKOVSKIY, A. K. & KHRAMTSOV, V. N., Origin of bauxites, *Kursk*, 102

GLEAESER, R., MANTINE, I., & MERING, J., Beidellite, 263

GLAGOLEV, A. A., NAGORNÝ, A. I., BRAGIN, B. A., BELOBORODOVA, S. S., & KULEMZN, K. N., Cu-smelting slags, *Kazakhstan*, 8

GLAGOLEVA, M. A. v. PERCHUK, L. L., 4

GLANGEAUD, L. & LÉTOILLE, R., Continental volcanoes, 68

— SAUVAGE, J. & MANHES, F., Tectonic & volcanic sequences, *Mont-Dore*, 147

GLASNER, A. & SKURNIK, S., Growth of ionic crystals, 282

GLASS, B., ERICSON, D. B., HEEZEN, B. C., OPDYKE, N. D., & GLASS, J. A., Odomagnetic reversals, 339

GLASS, J. A. v. GLASS, B., 339

GLASSER, F. P., Kentrolite, melanotekite, 108

— v. GLASSER, L. S. D., 178

GLASSER, L. S. D. & GLASSER, F. P., Structure of walstrostite, 178

— & SMITH, I. B., System $\text{MnO}-\text{O}-\text{H}_2\text{O}$, 266

GLAUSER, A., High-temperature plagioclases, *Iceland*, 51

GLEBOV, A. V. v. SERDYUCHENKO, D. P., 129

GLIKIN, A. E. & PETROV, T. G., Habit of fluorite, 106

GLIŃSKA, S. v. KAMIEŃSKI, M., 63

GLOVER, R. B., Thermal waters, *Rotorua*, 41

GODEVSKIY, M. N., Mobility of ore-forming components, 186

GODOVIKOV, A. A., Ag, Bi, Sb in galena, 222

— BARANOVSKIY, S. N., & SENDEROVÁ, V. M., Cosalite, *Kazakhstan*, 251

GOÉR DE HERVÉ, A. DE & VATIN-PÉRIGNON, N., Ordanchites, *Cantal*, 318

— v. VATIN-PÉRIGNON, N., 317

GOGISHVILI, V. G. & KHUNDADZE, A. G., Layered structure of obsidian, 229

GOGUEL, J., Crystal orientation in metamorphic rocks, 145

GOKHALE, N. W., Granitic rocks, *Hungary*, 232

GOOKHALE, Y. W. & BHAT, T. R., Chlorination of W ores, 103

GOLD, D. P., Carbonatites, 36

— Carbonatite & alkaline complex, Quebec, 46

— Deformed serpentinite, 228

— Alkaline ultrabasic rocks, Quebec, 228

— Possible diamond occurrences, 196

GOLD, T. v. MASSEY, H., 253

GOLDIN, B. A., Magnetite-sphalerite albitite, *Urals*, 156

— YUSHKIN, N. P., & FISHMAN, M. V., Chernovite, *Urals*, 227

GOLDING, H. C. & BAYLISS, P., Chlorite with lizardite, *New South Wales*, 219

— Altered chrome ores, *New South Wales*, 311

— v. LASSAK, E. V., 155

GOLDSCHMIDT, H. v. FÜCHTBAUER, H., 57

GOLDSCHMIDT, M. J., ARAD, A., & NEEV, D., Mechanism of saline springs, *Lake Tiberias*, 297

GOLDSTEIN, J. I., Germanium in meteorites, 212

— & SHORT, J. M., Cooling rates of meteorites, 124

— — Iron meteorites, 210

— v. BUSECK, P. R., 125; WASSON, J. T., 211

GOLES, G. C., Trace elements in ultramafic rocks, 228

— GREENLAND, L. P., & JÉRÔME, D. Y., Halogens in meteorites, 207

— v. GORDON, G. E., 198

GOLUBEVA, L. G., v. PIRYUTKO, M. M., 86

GOLÝJKO-VOL'FSOON, S. L. v. OKOROKOV, S. D., 8

GONCHAROV, YU. I. & VASILEVSKAYA, A. E., Boron in sediments, *Donbas*, 293

GOÑI, J. & GUILLEMIN, C., Trace elements in minerals & rocks, 35

— — — SARCIA, C., Colloidal Au, 284

GONZALEZ PEÑA, J. M. v. ALEXANDRE FERRANDIS, V., 111

GOODELL, H. G. v. BELL, D. L., 264

GOODMAN, P. & LEHMPFUHL, G., MgO $\text{h}00$ -systematic interactions, 180

GOOSSENS, P. v. BÉTHUNE, P. DE, 132

GORD, I. I., Analysis by, 303

GORDIENKO, L. A., HADGI, W. E., & TSINOBER, L. I., Growth twins in quartz, 104

GORDIENKO, V. V., Holmquistites, *North Carolina*, *Kola peninsula*, & *Sweden*, 47

— & DENISOV, A. P., Rubidium in muscovite, 136

GORDON, G. E., RANDLE, K., GOLES, G. G., CORLISS, J. B., BEESON, M. H., & OXLEY, S. S., Neutron activation analysis, 198

GORDON, J. B., Jr., Origin of baryte, *Georgia*, 78

— v. LINKER, E. S., 78

GORDON, J. E. & THORNE, R. L., Non-electrolyte activity coefficients, (II), 118

GORELOV, V. A. v. BOGACHEV, A. I., 97

GÖRLICH, E. & SZWAJA, A., Secondary dolomitic rocks, *Poland*, 71

GORKH, A. B. v. RUSAKOV, L. N., 8

GORKH, A. V. v. RUSAKOV, L. N., 8

GOROSHNIKOV, B. I., BAYRAKOV, V. V., & BOCHKOV, A. A., Corundum mineralization, *Ukraine*, 233

GOROSHNIKOV, V. I., Iridescence of corundum, 311

GORSHKOV, A. I. v. DORFMAN, M. D., 218

GORSHTKA, V. N., PETERSIL'YE, I. A., & PRIPACHKIN, V. A., Gases in rocks, *Khibiny*, 119

— v. DUDKIN, O. B., 234

GOSSE, R., Banded baryte, *New York*, 338

GOSWAMI, D. N. D., Melanterite, *Assam*, 78

GOTO, H. v. MAEDA, F., 86

GOTS, A. S. v. BLINOV, G. A., 102

GOTTARDI, G., Determination of Fe, 84

— Chain structure of group-silicates, 177

— v. GALLI, E., 179

GOTTESMANN, W., K-salt rocks, *Stassfurt*, 23

GOTTFRIED, D. v. KARAKIDA, Y., 82

GOUDEUR DE BEAUREGARD, C., DUBOIS, J., & BOURGUIGNON, P., Thermal behaviour of columbostannalites, 192

GOUGH, D., Ore shoots, *Cumberland*, 97

GOVETT, G. J. S., AUSTRIA, V., Jr., & BROWN, W. W., Copper prospecting, *Philippines*, 298

GOVINDARAJU, K., Determination of Na, K, 84

GRÄBE, R. & WUCHER, K., Current marks in conglomerate, *Thuringia*, 243

GRACE, J. D. & KENNEDY, G. C., Melting curves of gases, 25

GRACIANSKY, P. C. DE, Garnet, *Turkey*, 215

GRAESER, S., Origin of sulphides, sulphosalts, *Switzerland*, 290

— v. BURRI, G., 126

GRAF, D. L., BLYTH, C. R., & STEMMLE, R. S., Disorder in carbonates, 182

GRAF, R. B., System $\text{Ag}_3\text{AuS}_2\text{-Ag}_2\text{S}$, 285

GRAHAM, A. L. v. NICHOLLS, G. D., 87

GRAHAM, J., Formation of saponite, *Western Australia*, 92

GRAHAM, R. J. v. FITZGERALD, A. C., 277

GRAINGER, J. F. & RING, J., Observation of lunar luminescence, 254

GRANGER, H. C. v. SHAWE, D. R., 272

GRANGER, M.-M. & PROTAS, J., Structure of jouravskite, 270

— — — Gaudéfroyite, 95

GRASSMANN, H., Composition of rocks, 290

GRASSTY, R. L., Regression of seas, 253

— v. BROWN, P. E., 168

GRATTAN-BELLEW, P. E., Garnet from kimberlites, *Africa*, 45

GRAVELLE, M., Precambrian volcanism, *Sahara*, 321

— v. FERRARA, G., 255

GRAY, J. & KITTLEMAN, L. R., Basalts & associated floras, *Washington* & *Idaho*, 1

GREBENNIKOVA, O. T., Thorianite, *Enisei ridge*, 55

GREBENSHCHIKOV, R. G., System $\text{BaO-SiO}_2\text{-GeO}_2$, 8

GREEN, D. H., Peridotite intrusions, 228

— v. BANNO, S., 287; DALLWITZ, W. B., 134

GREEN, E. J., Aragonite, in sea-water, 142

GREEN, R. v. JONES, B. F., 67; SOLOMON, M., 3

GREEN, T. H., Thermal metamorphism, *Tasmania*, 72

— & RINGWOOD, A. E., Calc-alkaline igneous rocks, 287

GREENBLATT, M., BANKS, E., & POST, B., Spodiosite analogues, 271

GREENLAND, L. P. v. GOLES, G. G., 207

GREENWOOD, H. J., System $\text{MgO-SiO}_2\text{-H}_2\text{O-CO}_2$, 87

— Stability of wollastonite, 282

GREENWOOD, N. N. v. BANERJEE, S. K., 76

GREENWOOD, R. $\text{SiO}_2\text{-X}$, 309

GREER, R. T. v. WEBER, J. N., 250

GREENANIN, A. & SASSI, F. P., Rocks appearing migmatitic, 248

GREGOROWICZ, Z. v. MAREZAK, M., 290

GREGORY, G., Placer gold, *New England*, 78

GREGORY, G. E., Asbestos mine, Quebec, 163

GRIBBLE, C. D., Caledonian norites, *Aberdeenshire*, 60

— & O'HARA, M. J., Intrusive rocks, *NE Scotland*, 152

GRIFFITHS, J. C., Detrital sediments, 69

— v. DAHLBERG, E. C., 327

GRIFFITHS, W. R., Possible undiscovered minerals, 144

GRIGOR'YEV, D. P., Crystallization in chondrites, 120

GRIGOR'YEV, K. V. v. KARAVAYEV, N. M., 295

GRINENKO, L. N. & GRINENKO, V. A., Violet anhydrite, *Noril'sk*, 203

— — & LYAKHNTSKAYA, I. V., Sulphur isotopes in Cu-Ni ores, *Kola peninsula*, 291

GRINENKO, V. A. & GAZIZOV, M. S., S isotopes in sulphides, 202

— v. GRINENKO, L. N., 203, 291; PANKINA, R. G., 41; VINOGRADOV, A. P., 201

GRIVAKOV, A. G., Hornblendes from pyroclasts, *Crimea*, 135

— & SUPRYCHEV, V. A., Analcite, *Crimea*, 221

GRJEBINE, T. v. YOKOYAMA, Y., 241

GRODZICKI, A., Auriferous sands, *Wadroze Wielkie*, 18

GROGAN, R. M. v. TEMPLE, A. K., 96

GRÖGLER, N. v. LAY, C., 81

GROHMANN, H. v. SCHROLL, E., 34

GROMMEL, C. S., MERRILL, R. T., & VERHOOGEN, J., Palaeomagnetism of plutonic rocks, *Sierra Nevada*, 168

— v. DALRYMPLE, G. B., 337

GROOS, A. F. K. VAN, Origin of sulphide ores, 276

GROOT, T., BRUIJS, P. C. M. N., & VERBEEK, J. H. T. C., X-ray fluorescence analysis, 5

GROSS, M. G., Sinking rates of fallout, 241

GROSS, S., MAZOB, E., SASS, E., & ZAK, I., Mottled carbonate rocks, *Israel*, 245

GROSS, W. H. & THODE, H. G., Source of acid intrusives, 33

— v. BALDWIN, A. B., 279; FITZGERALD, A. C., 277

GROSSWALD, M. G., DEVIRTS, A. L., DOBKINA, E. I., & SEMEVSKIY, D. V., Crustal movements, *Spitsbergen*, 168

GROSSZ, Á., Trace elements in lignite, *Hungary*, 295

GROWITZ, D. J. v. CORBETT, R. G., 297

GRÜBB, P. L. C., Lateritization, *Western Australia*, 23

GRUBIĆ, A. v. DIMITRIJEVIĆ, M., 333

GRUM-GRZHIMAYLO, S. V. & RIMSKAYA-KORSAKOVA, O. M., Phlogopites, *Kola peninsula*, 136

GRUNDY, H. D. & BROWN, W. L., Triclinic feldspars, 51

GRUZA, V. V., Alkalies in igneous rocks, *Altai-Sayan*, 114

GRÝNKIV, Z. S. & KALYUZHNYI, V. A., Analysis of liquid inclusions, 4

GRZEDZICKI, K. v. RODZIEWICZ, W., 260

GUALTIERI, J. L. v. SHARP, W. N., 271

GUBSER, R. & LAVES, F., Adularias, *Alps*, 15

GUCWA, I. v. BADAK, J., 117; BOBER, L., 39

GUÉRIN, H. v. BROUSSE, R., 156

GUERNET, C., Lava flow, *Euboea island*, 232

GUILLARD, R. R. L. v. DEUSER, W. G., 297

GUILLEMEN, C., Analysis by, 18

— v. GOÑI, J., 35, 284

GUILLET, B. v. DURAND, G. L., 257

GUIMARÃES, D., Age of ugandite, *Sacramento*, 167

— Determination of absolute ages, 167

— & SAD, J. H. G., Alkaline massifs, *Salitre & Serra Negra*, 236

— v. DUTRA, C. V., 166

GUITARD, G., Low-pressure metamorphism, *Pyrenees*, 331

— Metamorphism of siliceous dolomites, *Pyrenees*, 332

GUKASIAN, R. KH. *v.* BAGDASARIAN, G. P., 82

GULA, J. A. *v.* LESLIE, W. C., 54

GULETSKAYA, E., Analysis by, 215

GUL'KO, N. V. & KAMENETSKIY, A. B., Phase investigations, 9

GULSON, B. L. & LOVERING, J. F., Electron probe analysis, 86

GUL'TYAI, I. I. & MAT'Ysheva, T. YA., Composition & viscosity of slags, 9

GULYAYEVA, L. A., KAPLUN, V. B., & SHISHENINA, E. P., Boron in oils, *Azerbaijan*, 41

GUNDLACH, H. & STOPPEL, D., Baryte ores, *Germany*, 280

— & WEISSER, D., SrSO_4 in baryte, *Sauerland*, 34

GUNN, C. B., Diamond in drift, *United States*, 164

— *v.* BALL, T. K., 146

GÜNTHERT, A., Determination of anorthite, 3

GUPTA, M. P. & GUPTA, N. P., Green mica, *Bihar*, 48

GUPTA, N. M. *v.* LUTHRA, J. M., 161

GUPTA, N. P. *v.* GUPTA, M. P., 48

GUPTA, Y. P. & WEIRICK, L. J., Ca diffusion in scheelite, 192

GURENKOVA, G. V. *v.* ABAKUMOVA, K. M., 91

GURIN, P. A. *v.* NAUMOV, V. A., 234

GURNEY, J. J. *v.* TAYLOR, S. R., 303

GUROV, E. P. & GUROVA, E. P., Mesozoic intrusions, *Stanovoy mts.*, 149

— Sanidine phenocrysts in porphyries, *Stanovoy mts.*, 219

GUROVA, E. P. *v.* GUROV, E. P., 149, 219; VALTER, A. A., 144

GURULEV, S. A., KOSTYUK, V. P., MANUYLOVA, M. M., & RAFIYENKO, N. I., Blue diopside, *Siberia*, 217

GUSEL'NIKOV, V. N. & VOLKOV, G. I., Minor elements in Fe ores, *Mikhaylova*, 199

GUSEV, V. V. *v.* PLAVSHUDIN, V. G., 313

GUSTAVSON, M., Geology, *Norway*, (I), 73

— Precambrian rocks, *Norway*, 157

GUTBERLETT, H. G. & HUCKENHOLZ, H. G., Analcite alkali trachytes, *W. Germany*, 217

GUTSALO, L. K., Argon in oilfield waters, *USSR*, 205

GUTT, W. & SMITH, M. A., $\alpha\text{-CaSO}_4$, 26

GÜVEN, N. & BURNHAM, C. W., Structure of 3T muscovite, *Washington*, 268

GUY, B. B., JEFFREY, G. A., & VAN TASSEL, R., Fluellite, 96

GVAKHARIYA, G. V., Diopsidic augites, *Georgian SSR*, 320

GVARAMADZE, N. D. *v.* IVANITSKIY, T. V., 200

GYSIN, M., Schists, *Switzerland*, 332

HAAPALA, I., SIIVOLA, J., & LÖFGREN, A., Sc-bearing columbite, *Finland*, 312

HABASHI, F., Radioactivity in phosphate rock, 23

HACCARD, D., Spilites, *Italy*, 230

HACHIYA, Y. *v.* OKADA, K., 55

HADGI, W. E. *v.* GORDIENKO, L. A., 104

HADNI, A. *v.* PLENDL, J. N., 76

HAEFFNER, K. *v.* JAGODZINSKI, H., 265

HAFFNER, S., Iron in troilite, pyrrhotite, 16

— *v.* EVANS, B. J., 267; GOHSE, S., 267

HAGGERTY, S. E. *v.* WATKINS, N. D., 337

HAGNER, A. F. *v.* FULLAGAR, P. D., 290

HAONI, R. D. & SAADALLAH, A. A., Altered limestone, *United States*, 21

HAGUENAUER, B. *v.* JURAIN, G., 36

HAHN-WEINHEIMER, P., Isotopes in marbles, 39

— & ACKERMANN, H., Granite plutons, *Black Forest*, (II), 114

— & LUECKE, W., Eclogitic rocks, 62

HAIGH, J. *v.* JONES, B. F., 67

HAINES, M., Tests for brucite in marble, 170

HAK, J., Antimony ores, *Low Tatra Mts.*, 101

HÄKLI, T. A., Crystallization temperatures of gabbro, *Finland*, 228

HALL, A. & KENNEDY, W. J., Aragonite in fossils, 241

— *v.* KENNEDY, W. J., 116

HALL, H. T., Pearceite-polybasite series, 140

HALL, M. *v.* MILTON, C., 127

HALLAM, A., Lias rocks, *Great Britain*, 242

— & PRICE, N. B., Strontium in mollusc shells, 202

— *v.* DUFF, P. M. D., 88

HALLBERG, R., Biosynthesis of pyrite, 107

HALPERIN, A. & NAWI, O., Zero-phonon line in diamond, 251

HALPERN, M., Age of plutonic rocks, *Antarctica*, 166

HAM, W. E., Andesite tuff, dacite, *Oklahoma*, 65

HAMADA, S. *v.* SHIRAKI, T., 113

HAMAGUCHI, H., TOMURA, K., ONUMA, N., HIGUCHI, H., & SUDA, K., Determination of In, 259

HAMILTON, D. L. & HENDERSON, C. M. B., Gel technique for silicate preparations, 193

HAMILTON, E. I., Strontium in alkaline rocks, 261

— U in standard rocks, 290

— Uranium in natural minerals, 299

— & FARQUHAR, R. M., Radiometric dating, (book), 261

HAMILTON, E. L., Abyssal plains, *Gulf of Alaska*, 236

HAMILTON, H. V., Xanthophyllite, *Utah*, 79

HAMILTON, J. C. *v.* SAINSBURY, C. L., 188, 298

HAMPFEL, J. *v.* CARMICHAEL, I. S. E., 290

HANCOCK, J. M. & KENNEDY, W. J., Hard & soft chalks, 153

HANDA, K. N. *v.* RAMACHANDRAN, V. S., 9

HANNAK, W., Carbonate minerals, *Schiefergebirge*, 57

HANSELMAYER, J., Quartz phyllite, *Styria*, 247

HANSEN, W. R. *v.* OLSON, J. C., 323

HANSFORD, S. H., Jades, *China*, (book), 261

HANUŠ, V. & KRS, M., Ferromagnetism of cassiterite, 276

— Magnetization of cassiterite, 337

— *v.* BERNARD, J. H., 20

HANYA, T. *v.* OTSUKI, A., 37

HAPUARACHCHI, D. J. A. C., Hornblende-granulite assemblages, *Ceylon*, 74

HARADA, K., IWAMOTO, S., & KIHARA, K., Erionite, phillipsite, gonnardite, *Niigata*, 220

— & KATSUTOSHI, T., Na-stilbite, *Mie*, 139

HARAMURA, H. *v.* ARAMAKI, S., 110

HARAPINSKA-DECPIUCH, M., Tuffaceous formation, *Poland*, 243

HARDER, H., Colour of corundum, 311

HARLAND, W. B., Early history, *Atlantic Ocean*, 253

HARPER, C. T., Ages of slates, *British Isles*, 2

— Ages of metamorphic rocks, *Scotland*, 2

— & LANDIS, C. A., Age of metamorphic rocks, *New Zealand*, 168

HARRAL, G., Analysis by, 235

HARRIS, A. L. *v.* PEACOCK, J. D., 317

HARRIS, D. C., NUFFIELD, E. W., & FROHBERG, M. H., Selenian polybasite, *Mexico*, 140

— *v.* NUFFIELD, E. W., 225

HARRIS, H. C., Micronutrient deficiency effects, 206

HARRIS, J. W., Inclusion orientation in diamond, 334

HARRIS, L. A. *v.* KOPP, O. C., 288

HARRIS, P. G., REAY, A., & WHITE, I. G., Composition of upper mantle, 228

HARRISON, R. K. *v.* EDWARDS, W. N., 147; YOUNG, B. R., 307

HART, P. J. *v.* KNOPOFF, L., 261

HART, S. R., DAVIS, G. L., STEIGER, R. H., & TILTON, G. R., Effects of contact metamorphism, 261

HARTE, B. *v.* COX, K. G., 6

HARTKE, H. & MEIER, R., Roof halite, *Stassfurt*, 328

HARTMAN, P., Rutile-type crystal morphology, 333

HARVEY, R. D., Thermal expansion of limestones, dolomites, *Illinois*, 250

HASEGAWA, K. *v.* HAYASHI, H., 109

HASHIDA, E.-I. *v.* KURODA, Y., 136

HASHIMOTO, M., Basic rocks, 114

— Analcite in mudstone, *Saitama*, 139

— *v.* KANEHIRA, K., 163

HASKIN, L. A. & HASKIN, M. A., Rare-earths in intrusion, *Greenland*, 228

— & SCHMITT, R. A., Rare-earth distributions, 87

— *v.* NORMAN, J. C., 111

HASKIN, M. A. *v.* HASKIN, L. A., 228

HASNUDDIN SIDDIQUE, M. K. = SIDDIQUE, M. K. H.

HASSANEIN, M., Substitution in Co-äkermanite, 195

HAUG, G. M. W. *v.* ORNSTEIN, M. A. M., 279

HAUG, P., SCHNOES, H. K., & BURLINGAME, A. L., Organic acids in shale, *Colorado*, 203

HAUPTMAN, Z. & SVOBODA, E., Growth of Cu-whiskers, 104

— *v.* KOTREBOVÁ, M., 104

HAWKES, D. D., Crystal nucleation in magma, *Sierra Leone*, 67

HAWKES, J., Texture of granite, *Dartmoor*, 67

HAWKINS, J. W., Jr., Metamorphic rocks, *Washington*, 333

HAWLEY, C. C. & MOORE, F. B., Ores, *Colorado*, 100

— ROECKE, R. C., & DYER, H. B., Geology, *Utah*, 272

HAWLEY, J. E., Upside-down ore zoning, *Ontario*, 18

HAWTHORPE, C. W. *v.* LESLIE, W. C., 54

HAWTIN, P., LEWIS, J. B., MOUL, N., & PHILLIPS, R. H., Heat of combustion of C_2 , 190

HAY, R. L. *v.* IJIMA, A., 309

HAYAMA, Y., Basic rocks, *Nagano*, 159

HAYASHI, H., NAKAYAMA, N., HASEGAWA, K., MIZUKUSA, S., MIZUNO, M., OGISO, S., & TORII, Y., High pressure phase transitions, (IV), 109

— — — NOGUCHI, T., OGISO, S., & TAKAGI, H., High pressure phase transitions, (V), 109

— — — TAKAGI, H., & TORII, Y., High-pressure phase transitions, (VI), 109

— & OINUMA, K., Structure of chlorite, 179

HAYASHI, M. *v.* YOSHIMURA, T., 308

HAYATSU, R., STUDIER, M. H., ODA, A., FUSE, K., & ANDERS, E., Organic matter in early solar system, (II), 213

— *v.* STUDIER, M. H., 212

HAYES, J. B., Dickite in limestones, *Kansas*, 11

HAYES, J. M., Organic content of meteorites, 125

— & BIEMANN, K., Organic matter in chondrites, 213

HAYGARTH, J. *v.* MATSUSHIMA, S., 28

HAZARKINA, G. B. *v.* VINOGRADOV, A. P., 254

FEATH, G. R., Nomenclature of soil carbonates, 154

FECHT, F. v. SCHAUDY, R., 207

FECKROODT, R. O. v. ROERING, C., 216, 304

FEEDGE, C. E. v. PETERMAN, Z. E., 168, 238

FEEDLEY, I. G. v. FORSYTH, J. B., 180

FEIDLUND, D. C. v. OLSEN, J. C., 323

FEEZEN, B. C., NESTEROFF, W. D., OBERLIN, A., & SABATIER, G., Attapulgite, *Gulf of Aden*, 91

— v. GLASS, B., 339

FEFLIK, W., Leucocratic alteration, *Silesia*, 320

— v. BUDKIEWICZ, M., 71

FEIER, K. S. & COMPSTON, W., K/Rb in eclogites, 295

— PALMER, P. D., & TAYLOR, S. R., Lead in feldspars, *Norway*, 50

— v. COMPSTON, W., 200

FEILAMMER, R. v. KAPLAN, G., 1

FEINERICH, E. W., Micas from pegmatites, *Colorado*, 136

— Micas from pegmatites, *Colorado*: correction, 136

— Igneous origin of carbonatites, 227

— & DAHLIN, D. H., Carbonatites, alkalic rocks, *Colorado*, 66

— Carbonatitic breccia pipes, *Colorado*, 66

— & VIAN, R. W., Carbonatitic barytes, 115

— v. QUON, S. H., 36

HEISKANEN, K. I. v. SOKOLEV, V. A., 321

HEKINIAN, R. v. OPDYKE, N. D., 230

HELFINSTINE, R. J. v. JACKMAN, H. W., 23

HEGESON, H. C., Solution chemistry & metamorphism, 87

HELIN, E. v. NICHIPORUK, W., 123

HELLER, W., Hydrocarbon extraction from shale, 189

HELLNER, E. & SCHÜRMANN, K., Metamorphic amphiboles, 110

HENAGE, L. F. v. BEST, M. G., 330

HENDERSON, C. M. B., Hastingsitic amphiboles, *Rhodesia*, 305

— v. HAMILTON, D. L., 193

HENDERSON, E. P. v. FUCHS, L. H., 227; WHITE, J. S., Jr., 129

HENDERSON, P., Determination of P, 172

HENDERSON, W. A. & WEBER, C. H., Roscherite, *New Hampshire*, 163

HENDERSON, W. A., Jr., Cu-rich slag, *Connecticut*, 80

HENDRICKSON, A. A. v. LESLIE, W. C., 54

HENDRIKS, L. P., Alteration of zircon grains, *Dominion Reef*, 215

HÉNIN, S. & ROBERT, M., Disaggregation of granite, 30

— v. BESSON, H., 111, 263

HENKE, B. L. v. BAIRD, A. K., 86

HENMI, K. & YAMAMOTO, T., Sudoite, *Japan*, 307

HENRY, P. v. PLENDL, J. N., 76

HEPWORTH, J. V., Photogeology of orogenic belts, *Uganda*, 246

HERBOSCH, A., Viridine, braunite, *Belgium*, 303

HERBSTINE, F. H. v. VILLIERS, P. D. de, 338

HERMANS, J. M. A., Determination of U, Th, 260

HERMON, E. v. EIBSCHÜTZ, M., 27, 182

HERNON, R. M. v. JONES, W. R., 65

HERON, S. D., Jr. & JOHNSON, H. S., Jr., Clay formation, *South Carolina*, 12

HERREID, G., Geology, geochemistry, *Alaska*, 42

HERMAN, A. G. & WEDEPohl, K. H., Determination of rare-earths, 260

HERTEL, L., Lattice dimension changes with substitution, 4

HERZBERG, W., Minor elements in sediments, *Kusel*, 37

HESSELMAN, A. v. VINOGRADOV, C., 187

ETHERINGTON, E. A., Jr. v. DENISON, R. E., 1

HETMAN, J. S. & PUZO, M., Determination of S, 5

HEUER, A. H., Deformation twinning in corundum, 160

HEWETT, D. F. v. RADTKE, A. S., 126

HEWETT, D. F., Geology, minerals, *Ontario*, 18

HEY, M. H., Delafossite, *Sverdlovsk & Nevada*, 141

— Meteorites & tektites, 298

— & EASTON, A. J., Khor Temiki meteorite, 210

— Copper in chondrites, 300

— v. EASTON, A. J., 122

HEYL, A. V. v. ZARTMAN, R. E., 256

HEYMANN, D. & ANDERS, E., Aluminium in meteorites, 209

— & MAZOR, E., Rare gases in chondrites, 122

— Nogoya chondrite, 213

— v. AMIEL, S., 43

HIBINO, T., MIURA, E., & SEKIYA, H., Acceleration of zircon formation, 28

HIETANEN, A., Scapolite, *Idaho*, 52

— Facies series in metamorphism, 157

HIGUCHI, H. v. HAMAGUCHI, H., 259

HILAL, O. M. & KIWAN, A. M., Uranium extraction from monazite, 189

HILL, J. C. C., Sea-bed prospecting, 170

HILL, T. P., WERNER, M. A., & HORTON, M. J., Sedimentary rocks, *United States*, 69

HILL, W. T. v. HOAGLAND, A. D., 98

HILLER, J., Jr., Muscovite, beryl, *Connecticut*, 338

HINRICHSEN, T. J., Synthetic gedrites, 194

HINTZE, C. & CHUDOBKA, K., Berndtite, ottomannite, 126

HIRAO, M. v. DAIMON, N., 110

HIRONO, S. v. TAKIMOTO, K., 140

HIRSCH, W. v. SUN, S.-C., 189

HIRTWE, W. M. v. WACKMAN, P. H., 76

HJELMQVIST, S., Pre-Quaternary rocks, *Sweden*, 146

HO, YUNG-NIAN & KWO, CHIN-TI, Orientation of uniaxial minerals, 83

HOAGLAND, A. D., HILL, W. T., & FULWEILER, R. E., Zinc ores, *Tennessee*, 98

HOBBS, B. E., Orebody, *Broken Hill*, 67

HODDEN, M. V., Optical activity in AgGaS₂, 251

HOCART, R. v. HUCHER, M., 118

HODENBERG, R. F. v. & KÜHN, R., Double salt of Mg, 106

— Efflorescence of kieserite, 311

HODGE, P. W., WRIGHT, F. W., & LANGWAY, C., Jr., Extraterrestrial origin of particles, (5), 215

— v. FRANKLIN, F. A., 215

HOERING, T. C., Precambrian rocks, 87

HOFMEISTER, W., Determination of Cu, 5

HÖFLER, H. & SORANTIN, H., Analysis of meteorites, 207

HOFMANN, A. v. BRINCK, J. W., 37

HOFMANN, J. v. BAUMANN, L., 229

HOGARTH, D. D., Intrusive carbonate rock, *Canada*, 66

HOHENBERG, C. M., MUNK, M. N., & REYNOLDS, J. H., Xenon, krypton in achondrite, 208

HOHMANN, H. H., MÜLLER, W., SCHMALZRIED, H., & TRETJAKOW, J. D., Disorder in feldrites, 15

HOLLIDAY, D. W., Secondary gypsum, *Spitzbergen*, 77

HOLM, J. L. & KLEPPA, O. J., Thermodynamics of albite transformation, 282

— & WESTRUM, E. F., Jr., Thermodynamics of silica transformations, 107

HOLMQUIST, S., Purified tridymite, 286

HOLSER, W. T. & KAPLAN, I. R., Sulphur isotopes in sediments, 203

— v. MATTOX, R. B., 261

HOLYŃSKA, B. & LANGER, L., Determination of Zr, 171

HOMMERIL, P., Marine sediments, *Channel islands*, 153

HONDA, M. v. SHIMA, M., 209, 299

HONISHI, O. v. YOSHIMURA, T., 308

HOOD, W. C., Determination of Fe, 259

— & CUSTER, R. L. P., Magnetic susceptibilities of micas, 336

HOOPER, P. R., X-ray fluorescence analysis, 5

— v. BALL, T. K., 146

HOPPE, G., Zircons in pyroclastic rock, *Harz mts.*, 328

HORIKOSHI, E., Chlorites from schists, *Sanbagawa*, 137

HORNING, G. v. COX, K. G., 148

HORTON, M. J. v. HILL, T. P., 69

HÖSCHL, P. & KOŇÁK, Č., CdTe single crystals, 104

HÖSEL, G., Formation of skarns, *Berggrieshübel*, 329

HOSHINO, H. & SHIMOJI, M., Ionic crystals, (II), 77

— v. SHIMOJI, M., 77

HOSKING, J. S., WHITE, W. A., & PARHAM, W. E., Firing of brick clays, *Illinois*, 175

HOSKING, K. F. G., Tin in granitic rocks, *Cornwall*, 187

HOSKING, P. K., Absite-brannerite minerals, *South Australia*, 103

HOTTELLER, P. B. & CHRIST, C. L., System MgO-SiO₂-CO₂-H₂O, (I), 194

HOTH, K. v. LORENZ, W., 329

HOVIS, W. A., Jr. & CALLAHAN, W. R., Reflectance spectra of rocks, 76

HOWELLS, M. F. v. LUMSDEN, G. I., 88

HOWER, J. v. MAXWELL, D. T., 71

HOWER, R. A., Current trends in mineralogy, 79

— & WOOLLEY, A. R., Titanium in garnets, 215

HŘÍCHOVÁ, R. v. BAUER, J., 62

HRYCKOWIAN, E., DUTCHER, R. R., & DACHILLE, F., Anthracite, *Pennsylvania*, 282

HSIEH, HSIEH-TE, Borate minerals, 177

HSIEH, S. v. CROCKET, J. H., 125

HSU, HSIEH-YEN v. WANG, HSU-LI-CHANG, 142

HSU, L. C., Melting of fayalite, 194

HSU, TIEN-HSU & HWANG, TIEN-HUA, Picrophengite in pegmatite, *China*, 306

HUANG, P. M. & JACKSON, M. L., Determination of F, 85

HUANG, W. H. & JOHNS, W. D., Determination of F, Cl, 85

— v. STUEBER, A. M., 200

HUANG, YUH-HYAI, Solanite, 129

HUBBARD, F. H., Myrmekite in charnockite, *Nigeria*, 59

— Xenoliths in kimberlite, *Sierra Leone*, 148

HUBER, N. K. & RINEHART, C. D., Volcanic rocks, *California*, 65

HUBER-SCHAUSBERGER, I. & SCHROLL, E., Fluorescence of fluorites, 56

HUBERT, A. v. CLIFTON, H. E., 84

HÜRNER, H., Glacial & glacio-marine rocks, *Congo*, 154

— Sulphide deposit, *Sweden*, 156

HUCHER, M., OBERLIN, A., & HOCART, R., Adsorption on alkali halide surfaces, 118

HUCKENHOLZ, H. G. v. GUTTERLETT, H. G., 217

HUDSON, J. D., Dissolution of calcite, aragonite, 224

HUDSON, J. N., Comp. of mollusc shells, 116

HUFFMAN, C., Jr., MENSIK, J. D., & RILEY, L. B., Determination of Au, 5
— v. SAINSBURY, C. L., 298

HUGHES, M. J. v. CHESTER, R., 170

HÜGI, T., Trace elements in rocks, *Swiss Alps*, 18

— KÖPPEL, V., QUERVAIN, F. DE, & RICKENBACH, E., Uranium ores, *Isérables*, 185

HUMPHRIES, D. W., Particle-size measurement, 169
— Work of H. C. Sorby, 253

HUNKE, J. C. v. NYQUIST, L. E., 301

HUNODER, N. v. DIETRICH, V., 185

HURLBUT, C. S., Jr. v. ARISTARAIN, L. F., 313

HURLEY, P. M., Abundance of Rb, K, Sr, 197, 290
— Differentiation of mantle, 228

— FAIRBAIRN, H. W., & PINSON, H. W., Jr., Strontium in lavas, *Italy*, 292
— v. MOORBATH, S., 113

HUŠEK, M. v. ECKSTEIN, J., 104

HUSSEIN, M. K. & EL-TAWIL, S. Z., Reduction of ilmenite, 26

— KAMMEL, R., & WINTERHAGER, H., Reduction of ilmenite ores, *Egypt & Norway*, 189

HUTCHINGS, A. M. J. v. TARLING, D. H., 337

HWANG, TIEN-HUA v. HSU, TIEN-HSIU, 306

HYLAND, G. J., Vanadium oxides, 190

IANOVICI, V. & DIMITRIU, A., Element distribution in limestones, *Carpathians*, 202
— & IONESCU, J., Minor elements in alkaline rocks, *Romania*, 115
— New carbonate mineral, *Romania*, 128
— & PITULEA, G., Radiometry of crystalline rocks, *Carpathians*, 230
— & LEMNE, W., Baryte deposit, *Ostra*, 102
— RĂDULESCU, D. P., DIMITRESCU, R., KRÄUTNER, H., & MIRĂTĂ, O., Metallogenetic map, *Romania*, 271

IBE, K. v. YOSHINAGA, N., 175

IBRÁNYI-ÁRKOSI, K., Kaolinites, *Hungary*, 176

IBRAYEV, T. A. v. LAVRUKHINA, A. K., 212

IDA, Y. v. AKIMOTO, S., 286

IDORN, G. M., Concrete structures, (book), 7

IGI, S. & MAEDA, K., Pyralspite garnet, *Japan*, 132

IDA, C., TANAKA, T., & YAMASAKI, K., Determination of Pb, 259

ISHII, K., SHIRO, Y., & UMEGAKI, Y., Force constants for corundum, 335
— v. UMEGAKI, Y., 336

IIJIMA, A. & HAY, R. L., Analcite in tuffs, *Wyoming*, 309

IIJIMA, S. v. TAKABATAKE, T., 275

IIYAMA, J. v. YAJIMA, J., 138

IIYAMA, J. T. v. MAURY, R., 77

IKORSKYI, S. V., Villiaumite, *Khibiny*, 63

IKRAMUDDIN, M., REDDY, K. G., & SADASHIVIAH, M. S., Deccan traps, *Mysore*, 150
— & SADASHIVIAH, M. S., Oligoclase dolerite, *Mysore*, 322

IL'CHENKO, L. N. v. EVZIKOVA, N. Z., 326

ILIĆ, M., Geotectonic evolution, *Dinaric*, 319

IL'IN, N. P., ABAKIROV, SH. A., & YURKINA, K. V., Zoned ferritorite, 56

IL'INSKAYA, G. G. v. TUROVSKI, S. D., 45

IL'VITSKIY, M. M. & ROMANENKO, G. N., Granite-serpentinite contacts, *Dnieper*, 97

ILYUKHIN, M. N. v. RONOV, A. B., 36

ILYUKHIN, V. V. v. DORFMAN, M. D., 252
— MAKSIMOVA, N. V., 15

IMAI, N., OTSUKA, R., NAKAMURA, T., & INOUE, H., Sepiolite, *Japan*, 308
— — & WATANABE, K., Kaolinite, *Niigata*, 91

IMBERT, P. & WINTENBERGER, M., Sternbergerite, cubanite, 95

IMREH, L., Lead-zinc ores, *Turkey*, 273

INDICHENKO, L. N. v. EFREMOVA, S. V., 7

INDOLEV, L. N. & ZHDANOV, YU. YA., Thermal metamorphism of feldspars, *Yakutia*, 219

INGAMMELIS, C. O., Analysis of silicates, 85
— & SUHR, N. H., Analysis of carbonate rocks, 32
— v. SUHR, N. H., 85

INGRAM, B. L. v. MILTON, C., 127

INGRAM, L. & TAYLOR, H. F. W., Sjögrenite, pyroaurite, 95

INGURAN, V. A., Analysis by, 48

INGEZ RODRIGUEZ, A. M. v. CAILLÈRE, S., 11

INOUE, H. v. IMAI, N., 308

IONESCU, J., Syenites in ceramics, *Ditrău*, 189

— v. CIOFLICA, G., 319; GIUŞCĂ, D., 199; IANOVICI, V., 115, 128

IONOV, V. A. v. BOLTNEVA, L. I., 293

IOVCHEVA, E. I. v. STAVROV, O. D., 199

IRVINE, T. N., Ultramafic complex, *Alaska*, 227
— & SMITH, C. H., Ultramafic rocks, *Canada*, 227

ISEVA, K. G., Analysis by, 222

ISETTI, G., Colour of baryte, *Sardinia*, 76

ISHIBASHI, K., Analysis by, 49

ISHIKAWA, T. v. KUNO, H., 153

ITO, J., Chevkinite, perrierite, 108
— Synthesis of calcio-gadolinite, 108
— Berzelite series, 192
— Pb-Ca-Zn silicates, 286
— & FRONDEL, C., Zirconium & titanium garnets, 29
— Synthetic Pb silicates, 108
— Synthetic kentrolite-melanotekite minerals, 108
— Synthesis of barylites, 109
— Synthetic hydrogarnets, 109
— Grossular-spessartine series, 286
— Analyses by, 44, 314
— v. WILKINS, R. W. T., 266

ITO, K. & KENNEDY, G. C., Phase relations in peridotite, 287
— v. COHEN, L. H., 287

ITTYACHEN, M. A. v. JOSHI, M. S., 335

IVANENKO, V. V. v. MELEN'T'YEV, B. N., 291

IVANITSKYI, T. V., GVARAMADZE, N. D., & MCHEDLISHVILI, T. D., Lead, zinc, copper in intrusions, *Georgian SSR*, 200

IVANOV, I. M. & ARNAUDOV, V., Mica-bearing pegmatites, *Bulgaria*, 273

IVANOV, O. P., Sulphide oxidation zones in permafrost, 33

IVANOV, V. I. & SIN'KOVA, L. A., Rare-earth phosphates, 182

IVANOV, V. V. v. RODIONOV, D. A., 197

IVANOVA, G. F., Halogen compounds of W, 20
— Determination of Mo, Sn, Pb, W, 198

IVANOVA, I. K. v. ALEKSEYEV, V. A., 82

IVANOVA, L. B. v. KRUCHININ, YU. D., 8

IVANOVA, V. P. v. KUZNETSOV, A. A., 229

IVASHOV, P. V. & BARDYUK, V. V., Tin in plants, *Soviet Far East*, 206

IVIMBEY-COOK, H. C. v. BERRIDGE, N. G., 162

IWAMOTO, S. v. HARADA, K., 220

IVYENGAR, G. N. K. v. ALCOCK, C. B., 25

IZETT, G. A. v. WILCOX, R. E., 258

JACK, R. N. v. CARMICHAEL, I. S. E., 290

JACKMAN, H. W., MIRZA, M. B., HELFINSTINE, R. J., & DICKERSON, D. R., Binders for fluorspar pellets, 23

JACKSON, E. D., Chromitite seam formation *Bushveld*, 68
— Ultramafic cumulates in intrusions, 227

— STEVENS, R. E., & BOWEN, R. W., Computer programme for mineral formulae, 4

JACKSON, M. L. v. ALEXIADES, C. A., 262

HUANG, P. M., 85; ROTH, C. B., 262

JACOB, H., Asphaltic petroleum derivatives, 245

JACOBSEN, J. B. E., Mineral deposits, *Rhodesia*, 183

JACQUIN, F. & SAAS, A., Flocculation of Ca humates, 203

JAEGER, R. R. & LIPSCHUTZ, M. E., Pressure history of meteorites, 42
— Shock effects in Fe meteorites, 123

JÄGER, E., NIGGLI, E., & WENK, E., Age of micas, *Alps*, 165

JAGODZINSKI, H., Disorder problems, 177

— & HAEFNER, K., Ionic non-stoichiometric crystals, 265
— v. KOREKAWA, M., 15

JAHANBAGLOO, I. C. & ZOLTAL, T., Structure of Al-serpentine, *Lake Superior*, 268

JAHNS, R. H., Serpentinites, *Vermont*, 227

JAKŠEŠ, P. v. ČERNÝ, P., 238

JAKOB, F. E. & STALDEB, H. A., Minerals, *Swiss Alps*, (book), 173

JAMBOR, J. L., Basic carbonates, (I), 128

— & BOYLE, R. W., Moorhouseite, aplowite, *Nova Scotia*, 131

— LACHANCE, G. R., & COURVILLE, S., Poitevinit, *Bethel Columbia*, 131

JAMESON, R., Irish Journal, 338

JAMIESON, B. G., Basic lavas, *Rhodesia*, 152

JAMIESON, P. B., Structure of $\text{Na}_2\text{Si}_3\text{O}_7$, 175

JAMKHANDI, M. S. R. & SADASHIVIAH, M. S., Multiple dyke, *Mysore*, 150

JANECKA, J. & STEMPROK, M., Tin mineralization, *Bohemia*, 188

JANS, H. & BÉTHUNE, P. DE, Amphibole from carbonatite, *Lueshe*, 305
— v. BÉTHUNE, P. DE, 305

JARCHOW, O., Cancrinite, 15

JAROSEWICH, E., Analyses of meteorites, 299
— Analysis by, 124
— v. MASON, B., 299

JAVOY, M. & FAYARD, M., Limestone-dolomite boundaries, *Montagne Noire*, 38

JAWAD, M. & AMIN, M., Vermiculite, *Pakistan*, 90

JEDWAB, J., Uranium in coal, *Schaentzel*, 38
— Magnetite in meteorites, 213

— Framboidal structures in meteorite, 213

— Greigite in mud, *Belgium*, 310

JEFFERY, P. G. & KERR, G. O., Determination of V, 85

JEFFREY, G. A. v. GUY, B. B., 96

JEFFREYS, H., Dynamics of moon, 253

JEN, YING-CHEN, Bismuth minerals, *China*, 163

JENČEK, V. & VAJNER, V., Stratigraphy, *Bohemia*, 332

JENKYN, H. C., Fossil Mn nodules, *Sicily*, 242, 294

JENNISON, R. C., Meteoritic bombardment of moon, 254

JENSEN, A. T. v. PETERSEN, L., 93

JENSEN, M. L., Origin of S deposits, *Gulf Coast & Sicily*, 262
— v. DECHOW, E., 187

JÉRÔME, D. Y. v. GOLES, G. G., 207

JERZMAŃSKI, J., Genesis of ores, *Kaczawskie mts.*, 17

INDRA, J. & FILIP, J., CaF_2 single crystals, 104

IPA, D., Limestones, *Carpathians*, 154

IZBA, Z. V., Sand evolution, 69

OCELYN, J., Banded flints, 241

QENSUU, O. I. v. WANGERSKY, P. J., 117

JOHAN, Z., *Jalpaite, Bohutin*, 222

JOHANSEN, O. & STEINNES, E., Determination of In, 86
— Determination of Mn, 172

— v. BRUNFELT, A. O., 86

JOHNS, W. D. & SEN GUPTA, P. K., H-bonds in layer silicates, 14
— $\text{Alkylammonium-vermiculite}$ complexes, 269

— v. HUANG, W. H., 85; STUEBER, A. M., 200

JOHNSON, C. E. v. FORSYTHE, J. B., 180

JOHNSON, G. G. & VAND, V., Origin of crater, *Ries Kessel*, 214

JOHNSON, H. S., *Jr. v. HERON, S. D., Jr.*, 12

JOHNSON, N. M., Contact-metamorphosed limestone, *Arizona*, 72
— & BLANCHARD, R. L., Thermoluminescence of fossils, 83

LIKENS, G. E., BORMANN, F. H., & PIERCE, R. S., Weathering of silicate minerals, *New Hampshire*, 174

JOHNSON, S. S., *Kyanite, Virginia*, 23
— & TYRELL, M. E., Clay & related materials, *Virginia*, 93

JOHNSON, V. v. MORRIS, B., 27

JOHNSTON, R. v. DREVER, H. I., 61, 227

JOLLY, J. H. & FOSTER, H. L., *Aluminocópiapite, Alaska*, 143

JONES, B. F., HAIGH, J., & GREEN, R., *Dolerite, Tasmania*, 67
— v. CLAYTON, R. N., 241; EUGSTER, H. P., 129

JONES, D. L. & McELHINNY, M. W., Palaeomagnetism of red beds, *South Africa*, 253

— WALFORD, M. E. R., & GIFFORD, A. C., Palaeomagnetism of lavas, *South Africa*, 337

JONES, J. G., *Intratriglacial volcanoes, Iceland*, 69

JONES, L. H. P., MILNE, A. A., & SANDERS, J. V., *Tabashir, Burma*, 196

JONES, L. M., FAURE, G., & MONTIGNY, R. J. E., Origin of salts, *Antarctica*, 296

JONES, M. P., Processing of Sn ores, 187

JONES, N. W. v. RIBBE, P. H., 266

JONES, R. S. v. FRONDEL, J. W., 145

JONES, W. R., HERON, R. M., & MOORE, S. L., *Geology, New Mexico*, 65

JOPLIN, G. A., *Metamorphic rocks, Australia*, (book), 261

JOSHI, M. S. & ITTYACHEN, M. A., Etching of apophyllite, 335
— & KOTRU, P. N., Etch patterns on quartz, 193
— & VAGH, A. S., Rhombohedral faces of quartz, 75, 160

JOST, K. H. & SCHULZE, H. J., Microthermometer for goniometer, 258

JOSWIG, W. v. TAKÉUCHI, Y., 268

JOUBERT, J.-C., Ionic compounds with ordered vacancies, 190

JOULIA, F. v. TROMPETTE, R., 329

JOVANOVIC, S. & REED, G. W., Mercury in metamorphic rocks, *Lake Superior*, 204
— v. REED, G. W., Jr., 209

JOYNER, W. B., Basalt-eclogite transition, 242

JUHÁSZ, A. v. SZÁDECZKY-KARDOSS, E., 319, 333

JUHÁSZ, Z. & KLEIN-KAKASY, I., Stability of bentonite suspensions, *Mdd*, 176

JUNG, D., *Palatinites, W. Germany*, 228

JURAIN, G. & HAGUENAUER, B., Copper, uranium in sediments, *Tagus river*, 36
— v. COPPENS, R., 35

JUVE, G., Pb-Zn ores, *Norway*, 98

KAADEN, G. v. D., *Glaucomphane rocks, Turkey*, 158

KABATA-PENDIAS, A., *Triassic rocks, Poland*, 92

KACKER, K. P. v. RAMACHANDRAN, V. S., 9

KADAŇKA, J. & MIČKA, J., Silicon for single crystals, 104

KADARMETOV, KH. N. v. RUSAKOV, L. N., 8

KADEČKOVÁ, S. & ŠESTÁK, B., Single crystals of alloys, 104

KADIK, A. A. & KHITAROV, N. I., Mass exchange with magmas, 59

KADYROV, V., *Shore-zone water, lake Issyk-Kul*, 204

KAEMMEL, T. A. S., Eh & pH in natural waters, 204

KAFKAFI, U., Phosphate adsorption on kaolinite, 263

KATIBCHEVA, M. N. & PIVNIK, L. YA., Minerals in furnace footings, 8

KALENIĆ, M. v. DIMITRIJEVIĆ, M., 333

KALININ, D. V. & DENISKINA, N. D., Formation of garnets, 286

KALININ, S. K. v. SHCHERBA, G. N., 200

KALLENBACH, H., Minerals in loess, *Bavaria*, 12

KALLIO, P., *Perrierite, Finland*, 162

KALLIOKOSKI, J., *Sulphide ores, N. America*, 99
— v. POSADAS, V. G., 255

KALMURZAYEV, K. E. v. ADYSHEV, M. M., 202

KALPACHIEVA, S., Analysis by, 145

KALSBEEK, F. & ZWART, H. J., *Zircons, Pyrenees*, 303

KALYUZHENÝ, V. A. v. GRÝNKIV, Z. S., 4

KAMB, B., PRAKASH, A., & KNOBLER, C., Structure of ice-V, 180

KAMENETSKÍ, A. B. v. GUL'KO, N. V., 9

KAMENICKÝ, J., *Regional metamorphism, Carpathians*, 332

KAMENOV, B., Biotite from plagiogranite, *Manastir hills*, 48

KAMENTSEV, I. E., Microisomorphic replacement, 309
— v. FRANK-KAMENETSKY, V. A., 309

KAMIEŃSKI, M. & GLIŃSKA, S., Tuffite with halite, *Poland*, 63

KAMMEL, R. v. HUSSEIN, M. K., 189

KAMMORI, O. & TAGUCHI, I., Determination of Fe, 85

KANAMORI, H., FUJII, N., & MIZUTANI, H., Thermal diffusivities of minerals, 250

KANAMORI, N. v. KITANO, Y., 284

KANASIEWICH, E. R., Interpretation of Pb isotopes, 261

KANEHIRA, K., BANNO, S., & HASHIMOTO, M., *Awaruite, Shikoku*, 163
— & NISHIDA, K., Sulphide & oxide minerals, *Japan*, 141
— v. BANNO, S., 163

KANEOKA, I. v. OZIMA, M., 168

KANO, S. & NAMBU, M., System FeS-S_2 , (I), 284

KAPCHENKO, L. N., Origin of brines, 41

KAPLAN, G., FAURE, D., ELOY, R., & HEILAMMER, R., Origin of lamproites, *Western Australia*, 1
— Age of rocks, *El Gassi*, 165

KAPLAN, I. R. v. HOLSER, W. T., 203; PRESLEY, B. J., 204

KAPLAN, M. E., Triassic sediments, *USSR*, 244

KAPLUN, V. B. v. GULYAYEVA, L. A., 41

KAPRANOV, S. D. v. KRAYNOV, S. R., 40, 205

KAPUSTIN, YU. L., Rare-earths in carbonates, 201
— Norsethite, *USSR*, 312

— & BYKOVA, A. V., *Hiortdahlite, Tuva*, 304

KARAKAS, E. v. GABIS, V., 55

KARAKIDA, Y., TOMITA, T., GOTTFRIED, D., STERN, T. W. & ROSE, H. J., Jr., Age of granitic rocks, *Japan*, 82

KARAMATA, S., KNEŽEVIĆ, V., ANTONIJEVIĆ, I., DJORDJEVIĆ, M., MIĆIĆ, I., DIVLJAN, S., & DROVENIK, M., *Eruptive rocks, Serbia*, 319

KARASEK, M. A. & BOL'SHAKOV, A. P., Mercury dispersion patterns, *Nikitovka*, 298

KARATAYEVA, G. N. v. KUTOLIN, V. A., 316

KARAVAYEV, N. M., VENER, R. A., & GRIGOR'YEVA, K. V., *Oxidized coal from permafrost, Arkagala*, 295

KARPOV, G. F. v. BUTUJLINOV, N. V., 115

KARPOV, I. K. & KASHIK, S. A., Dehydration of muscovite, 190
— & PAMPURA, V. D., *Muscovite, orthoclase*, 110

KARPOV, P. A. & CHUGUNOV, N. A., Devonian extrusions, *Voronezh*, 320

KARPUSHINA, V. A. v. GERASIMOVSKIY, V. I., 35

KARR, C., Jr. v. ESTEP, P. A., 224

KARTENKO, N. F. v. MINEEVA, I. G., 54

KARUP-MØLLER, S., *Berryite, Greenland*, 225

KARYAKIN, A. V. v. ANIKINA, L. I., 251; VINOGRADOV, A. P., 44

KARYAKIN, L. I., Reactions of refractories, 8
— & TSYKINA, V. M., *Kotoite, ludwigite, formed in furnace*, 191

KASAHARA, K. v. KUBO, Y., 288

KASATOV, B. K. v. KUZNETSOV, A. A., 229

KASHIK, S. A. v. KARPOV, I. K., 190

KASHIMA, N. v. YAMAUCHI, H., 164, 339

KATADA, M. & SUMI, K., Co-existing stilpnomelane & biotite, *Kiso*, 137

KATAYEVA, Z. T. v. SEMENOV, E. I., 225

KATO, A. v. MINATO, H., 310; NAGASHIMA, K., 133, 142; WATANABE, T., 55

KATO, G., Biogenetic pyrite, *Japan*, 294

KATO, S. v. OKADA, K., 55

KATSUL, Y. v. KUNO, H., 153

KATSUTOSHI, T. v. HARADA, K., 139

KATZ, A., Determination of alumina & silica, 171
— v. GARFUNKEL, Z., 156

KATZ, H. R. & WATTERS, W. A., Geology, *Navarino island*, 66

KAUL, I. K., Age of radioactive mineralization, *Singhbhum*, 2

KAUSHANSKI, V. E. v. BUTT, YU. M., 9

KAUTZ, K. & WEITZ, G., *Antlerite, chalcanthite, Turkey*, 78

KAWAHARA, A., *Chervetite*, 96

KAWAMURA, T., *Silicon carbide crystals*, 105

KAWANO, Y. & UEDA, Y., Age of igneous rocks, *Japan*, (VI), 82

KAYUPOVA, M. M., *Silicomanganberzelite, Kazakhstan*, 130
— *Pennantite, Kazakhstan*, 307

KAZAKOV, G. A. v. MILLER, Y. M., 38; RONOV, A. B., 36

KAZAKOVA, M. E., Analysis by, 130
— v. DUSMATOV, V. D., 226; SEMENOV, E. I., 53

KAZANTSEVA, A. I. v. ORSA, V. I., 198

KAZARYAN, A. G., ARUTYUNYAN, T. M., & GALSTYAN, R. S., *Black calcite, Kafansk*, 142

KAZITSYN, YU. V., *Svanbergitization, Transbaikal*, 313

KAZMITCHEFF, A., Au-bearing outcrop, *Congo*, 278

KEAYS, R. R. v. CROCKET, J. H., 125

KEDVES, M. & BOHONY, E., Spore & pollen types, *Hungary*, 80

KEESTER, K. L. & WHITE, W. B., Bonding in Mn minerals, 265

— v. WHITE, W. B., 93

KEIL, K., Daubréelite, troilite from chondrites, 299

— v. BUNCH, T. E., 122; CHAPMAN, D. R., 214; SNETSINGER, K. G., 122, 260

KELCH, H., Colour of lavas, 245

KELLAWAY, G. A., Borehole, *Bristol*, 154

— v. ADAMS, H. F., 154

KELLER, J., Glacial terraces, *Sicily*, 326

KELLER, W. D. & SMITH, G. E., Nitrate in ground-waters, 207

KEMP, A. L. W. & THODE, H. G., Bacterial fractionation of S isotopes, 117

KEMP, W. C. & EGER, D. T., Sedimentation rates, *Caribbean*, 80

KEMPE, D. R. C., Sillimanite-kyanite rocks, *Tanangire*, 45

— Kaersutite from minverite, *Cornwall*, 218

KENNARD, M. F., KNILL, J. L., & VAUGHAN, P. R., Carboniferous shale, *Yorkshire*, 164

KENNEDY, D. R., Sn-Zn-Pb prospect, *New South Wales*, 276

— v. WALLIS, G. R., 281

KENNEDY, G. C. v. COHEN, L. H., 287; GRACE, J. D., 25; ITO, K., 287; KITAHARA, S., 29; MATSUSHIMA, S., 28

KENNEDY, W. J. & HALL, A., Stability of fossil aragonite, 116

— & TAYLOR, J. D., Aragonite in rudists, 339

— v. HALL, A., 241; HANCOCK, J. M., 153

KENNY, G. S. v. DENISON, R. E., 1

KENT, P. E., Salt dome intrusions, 80

KEPEZHINSKAS, K. B. & SOBOLEV, V. S., Chlorite types, 307

KERBYSON, J. D. & SCHANDORF, J. R. H., Rocks, ores, minerals, *Ghana*, 289

KERN, R. v. BIENFAIT, M., 283

KERNS, R. L., Jr., Cation exchange capacity, 89

— Clay mineral dehydration, 90

X-ray fluorescence analysis, 172

KERR, G. O. v. JEFFERY, P. G., 85

KERR, L. S. & WILLIAMS, D. J., Structure of yugawaralite, 269

KERR, M. H., Analysis by, 235

KERTAI, G., Origin of hydrocarbon gases, *Hungary*, 295

KHABAKOV, A. V. v. BERLIN, T. S., 206, 327

KHALILOV, A. D. & MAKAROV, E. S., Murmanite-lomonosovite minerals, 16

— MAMEDOV, K. S., & P'YANZINA, L. YA., Murmanite-lomonosovite minerals, 182

— — — Structure of murmanite, *Lovozero*, 268

KHAN, B. KH., BYKOV, I. I., & NIKULINA, E. A., Crystallization of cast pyroxene, 8

KHANDELWAL, S. v. EHRLINGER, H. P., III, 189

KHARITONOV, L. YA. v. BOGDANOV, YU. B., 149

KHARKAR, D. P., TUREKIAN, K. K., & BERTINE, K. K., Trace elements in river-waters, 204

KHASANOV, A. KH. & FAYZIYEV, A. R., Fluorite-calcite veining from metasomatism, *Tien-Shan*, 156

KHASHKOVSKAYA, A. P. v. SYCHEV, M. M., 8

KHASIN, R. A. & KHRAPOV, A. A., Ultra-basite belts, *Mongolia*, 321

KHAYRETDINOV, I. A. v. VOYTEKOVICH, G. V., 161

KHITAROV, N. I., High-pressure processes, 24

— ARUTYUNYAN, L. A., & MALININ, S. D., Molybdenum migration in vapour phase, 193

— & PUGIN, V. A., Montmorillonite, 10

— & RYZHENKO, B. N., Formation of aluminosilicates, 24

— & SLUTSKIY, A. B., Melting of albite, basalt, 31

— v. KADIK, A. A., 59; SENDEROV, E. E., 198; UCHAMEYSHVILI, N. E., 107

KHODAKOVSKIY, I. L., Solubility of sulphides, 32

— MISHIN, I. V., & ZHOGINA, V. V., Temperature dependence of solubility products, 24

KHOMYAKOV, A. P., Rare-earth distribution, 197

KHOTIN, M. YU. v. BONDARENKO, V. N., 153

KHOURLY, S. G., Lewisian rocks, *Sutherland*, 332

KHRYAMTSEV, V. N. v. GLADKOVSKIY, A. K., 102

KHERAPOV, A. A. v. KHASIN, R. A., 321

KHRIPOVKA, N. N. v. ZHUNINA, L. A., 9

KHUNDADZE, A. G. v. GOGISHVILI, V. G., 229

KHVESTOVA, V. P. v. RAZIN, L. V., 112

KIESL, W. v. SCHAUDY, R., 207

KIHARA, K. v. HARADA, K., 220

KILLER, M. A., MARMOR, S. A., & DILAKTORSKIY, N. L., Crystallization of slate, ash melts, 8

KIKUCHI, T. v. TOGARI, K., 163

KIM, C. W., Alteration of plagioclases, *Hokkaido*, 138

KIM, JONG HWAN v. LEE, JOUNG HWAN, 338

KIM, V. F. v. TUROVSKIY, S. D., 45

KIMBERLIN, J. v. WASSON, J. T., 211

KIND, N. V. v. ALEKSEYEV, V. A., 82

KING, E. A., Georgia tektites, 44

KING, E. A., Jr., Tektites, 303

KING, R. J., Minerals, *Leicestershire*, 77

— v. FORD, T. D., 21, 185

KING, V., Vitreous silica, 15

KINKEL, A. R., Jr., Massive pyrite deposits, 17

— Copper ores, *North Carolina*, 19

— Emplacement of massive pyrite, 182

KINNUNEN, J. v. LINDDJÖ, O., Determination of rare-earths, 259

KINOSHITA, H. v. OZIMA, M., 168

KINOSHITA, W. T. v. WRIGHT, T. L., 327

KINSMAN, D. J. J., Huntite, *Persian Gulf*, 142

KIRCHNER, E. v. PREWITT, C. T., 267

KIRILLOV, A. S. v. LEBEDEV, V. I., 33

KIRKINSKAYA, V. N., Organic matter in basement rocks, *Irkutsk*, 295

KIRKINSKIY, V. A., Components of mantle, 196

— Enstatite in mantle, 282

— & YAROSHEVSKIY, A. A., Isomorphism, 204

KIRKLAND, D. W., BRADBURY, J. P., & DEAN, W. E., Jr., Salt deposit, *Mexico*, 71

KIRNOV, F. F. v. VINOGRADOV, A. P., 254

KIROV, G. N. & POULIEFF, C. N., Thaumasite, *Bulgaria*, 310

KIRSTEN, T. v. FUNKHOUSER, J., 301

KISCH, H. J. & TAYLOR, G. H., Intrusive-coal contact, *Queensland*, 71

KISELEVA, E. A. v. KRAYNOV, S. R., 40

KISS, E., Determination of Al, Fe, 170

— Analysis by, 219

KISS, J. v. SZÁDECKZY-KARDOSS, E., 319

KISS, L., Ceramic properties of clay minerals, 176

KISSIN, I. G., Composition of ground-water, *Ciscaucasia*, 204

— & PAKHOMOV, S. I., Composition of subsurface water, 195

KISSLING, A., Mineral working, zones & textures, *Banat*, 245

KISVARSANYI, G. & PROCTOR, P. D., Trace elements in magnetite, hematite, *Missouri*, 291

KITAHARA, J.-I., Chromites, *Tottori*, 141

KITAHARA, S. & KENNEDY, G. C., System MgO-SiO₂-H₂O, 29

KITAHARI, J., Dravite, *Honshu*, 304

KITAMURA, T. v. NAMBU, M., 132

KITANO, Y., Deposits in hot springs, *Japan*, 119

— & KANAMORI, N., Magnesian calcite, 284

KITTELL, E., Genesis of ores, 17

KITTLEMAN, L. R. v. GRAY, J. I.

KIWAN, A. M. v. HILAL, O. M., 189

KIZAKI, K. v. SHIBUYA, G., 311

KIZAKI, Y., Alteration of tuffs, *Gunma*, 187

— Zeolite, *Gunma*, 139

KLEIN, C., Flint & chert in chalks, *Paris basin*, 153

KLEIN, C., Jr. & FRONDEL, C., Antimonian groutite, *New Jersey*, 56

KLEIN-KAKASY, I. v. JUHÁSZ, Z., 176

KLEMENT, W., Jr. & COHEN, L. H., High-low quartz inversion, 193

— v. COHEN, L. H., 193

KLEMM, D. D., Electron probe analysis of inclusions, 5

— v. BODECHETEL, J., 20

KLEPIKOVA, E. A. v. KOZLOV, V. D., 219

KLEPPA, O. J., Oxide systems, 29

— v. HOLM, J. L., 107, 282

KLERKX, J., Determination of basic volvanites, 315

— v. LAMOUREUX, C., 326; MICHT, J., 67

KLIESCH, C. v. SCHWIEDE, H. E., 10

KLIMENKO, Z. G. & TIKHONOV, B. A., Mn hydrogarnets, 8

KLITCHENKO, M. A., KRECHKOVSKIY, Z. S. & LYUBARSKAYA, G. A., Vivianite, *Ukraine*, 313

KLOOSTERMAN, J. B., Tin province, *South America*, 188

KLUTH, C., Emplectite, *Germany*, 77

— Wittichenite, emplectite, 79

KLYAKHIN, V. A. & DMITRIEVA, M. T., Lillianite, 314

KLYAROVSKIY, V. M. & KOSTYUK, V. P., Age of alkaline rocks, *Sayan*, 83

KMENT, V., KVAPIL, J., & DOLEJŠ, V., Furnace materials, 104

— v. KVAPIL, J., 104

KNEŽEVIĆ, V. v. KARAMATA, S., 319

KNIGHT, C. A., Spiral air bubbles in ice, 168

KNIGHT, J. R. v. BRAITHWAITE, R. S. W., 252

KNILL, J. L. v. KENNARD, M. F., 164

KNOBLER, C. v. KAMB, B., 180

KNOFFOP, L., DRAKE, C. L., & HART, P. J., Crust & upper mantle, *Pacific Ocean*, 261

KNORRE, K. G. v. ARTEMOV, YU. M., 202

KNORRING, O. v. VON, Sinhalite from skarn, *Tanzania*, 144

— Carbonatitic lavas, *Uganda*, 148

— Analysis by, 224

— v. SAHAMA, T. G., 308

KNYAZEVA, D. N. v. PLOSHKO, V. V., 7

KOBAYASHI, K. & OINUMA, K., Clay minerals in marine sediments, 92

— v. OINUMA, K., 89; OZIMA, M., 168

KOBELEV, M. V. v. BUTURLINOV, N. V., 115

KOBO, K., Volcanic ash soils, 265

KOCH, H. F., Diabase, *North Carolina*, 151

KOCHENOV, A. V. v. BATURIN, G. N., 201

KOCHNEV-PERVUKHOV, V. I. v. BOGACHEV, A. I., 97

KOCK, H. v. NICKEL, E., 190

KODAMA, H. v. FORMAN, S. A., 137; OINUMA K., 89, 90

KOEN, G. M., Platinoid grains in conglomerates, *Witwatersrand*, 186
— v. TYRWHITT, D. S., 244

KOFFMAN, D. M. v. DODD, R. T., Jr., 299

KOGAN, R. M. v. BOLTNEVA, L. I., 293

KOGARKO, L. N., Cryolite parageneses, 193
— & POLYAKOV, A. I., Aegapitic nepheline syenites, *Kola peninsula*, 239
— v. GERASIMOVSKY, V. I., 6

KOHL, D. W. & RODDA, J. L., Iowaite, *Iowa*, 127

KOHMAN, T. P. v. SHEDLOVSKY, J. P., 209

KOIZUMI, M. v. NAKAJIMA, W., 138

KOLBASOV, B. M. v. BUTT, YU. M., 9

KOLENKO, L. I. v. POKROVSKIY, P. V., 144

KOLESNIKOV, E. M. v. CHERDYNTSEV, V. V., 293

KOLESNIKOV, L. V. & RUMYANTSEV, G. S., 311

KOLODNY, Y., Lithostratigraphy, *Negev*, 244

KOLONIN, G. R., Stability of bismutite, 282

KOLOSKOV, A. V. v. VOLYNETS, O. N., 320

KOLOTOV, B. A. v. KRAYNOV, S. R., 40

KOLTYPIN, S. N. & SAFONOVA, V. S., Pyroclastic rocks in sediments, *Caspian trough*, 321

KOMAROV, A. N. & SHUKOLYUKOV, YU. A., Uranium in micas, 218

KOMAROVA, N. A., Molten clinker, 8

KOMATSU, H. v. LAWN, B. R., 160

KOMKOV, A. I., Samarskite, 54
— & BELOPOL'SKIY, M. P., System U_3O_8 — Nb_2O_5 , 26

KOMLÓSSY, G., Genesis of bauxites, *Hungary*, 177

KOŇÁK, Č. v. HÖSCHL, P., 104

KON'KOV, G. G. v. PANOV, B. S., 33

KONNO, H., Smoky quartz, amethyst, *Japan*, (II), 138

KONO, M. & NAGATA, T., Palaeomagnetism of basalts, *SW United States*, 162
— v. OZIMA, M., 168

KONONOVA, L. N. v. SMIRNOV, L. Y., 42

KONONOVA, M. M., Intergrowths in pyroxenes, *Ukraine*, 46
— Pyroxenes from charnockites, *Ukraine*, 305

KONOVALOV, P. F. v. VOLKONSKIY, B. V., 8

KONSTANTINOV, M. M., Lead-zinc ores, *Osetia*, 273

KONSTANTINOV, R. M. v. TOMSON, I. N., 33

KONSTANTINOWA, V. v. RUSTSHEV, D. D., 189

KONTA, J., Tektites in sediments, *Bohemia*, 44

KONTOROVICH, A. E., Sedimentary rocks, *Siberia*, 201
— BOGORODSKAYA, L. I., LIPNITSKAYA, L. F., MEL'NIKOVA, V. M., & STASOVA, O. F., Hydrocarbons in mudstone, *Siberia*, 116

KOPAL, Z., Lunar shape & moment of inertia, 254

KOPECKÝ, L. & SATTRAN, V., Pyrope peridotite, *České Středohoří mts.*, 62
— v. DUDEK, A., 62

KOPF, M., Granitoid rocks, *Bornholm*, 161

KOPIN, V. I., KCl in sylvinites, *Upper Kama basin*, 23

KOPF, O. C. & HARRIS, L. A., Synthesis of grunerite, 288

KÖPPEL, V., Geology, ores, *Alps*, 186
— v. HÜGI, T., 185

KOPTEV-DVORNIKOV, B. S. & RUB, M. G., Accessory minerals, (book), 7

KOREKAWA, M. & JAGODZINSKI, H., Super-satellites in labradorites, 15

KORIKOVSKIY, S. P. & FEDOROVSKIY, V. S., Geology, petrology, *Stanovoy & Baikal*, 149

KORMAN, T. P. v. LEFELHOCZ, J. F., 117

KORN, O. P. v. NIKOLAYEV, D. S., 296

KORNEV, V. I. v. SYCHEV, M. M., 8

KOROBKOV, V. I. v. MINEYeva, I. G., 36; POLYAKOV, A. I., 6

KOROBOVA, N. I., Ilmenite schist, *Taymyr*, 158

KOROLEV, D. F. & KOZERENKO, S. V., Iron sulphides from solution, 285

KOROLEV, YU. M., Structure of K-allevardite, *Kuli-Kolon*, 179
— Alushtite, *Crimea*, 268

KORÝMKOVA, E. N. & FEDOSEYEV, A. D., Dehydration of zeolites, 8

KOSHMAN, P. N. v. DENISOV, S. V., 113

KOS'KO, M. K. & RADCHENKO, N. S., Trachyandesite, syenodiorite, *Koryak mts.*, 233

KOSTENKO, I. F. v. ZORIN, E. S., 310

KOSTETSKAYA, Y. V. & PETROVA, Z. I., Element distribution in biotites, *Transbaikal*, 49

KOSTOV, I., Classification of crystal habit, 333
— Mineralogy, (book), 261

KOSTYNNINA, L. P. v. SEMENOV, E. I., 53

KOSTYUK, V. P., System diopside-hedenbergite-aegirine, 134
— v. GURULEV, S. A., 217; KLYAROVSKIY, V. M., 83

KOSZTOLANYI, C., Lead isotopes in zircons, 87
— & DULLIER, B., Secondary U minerals, *Limoniusin*, 273

KOTEL'NIKOV, D. D. v. TEODOROVICH, G. I., 264

KOTO, K. v. MORIMOTO, N., 181

KOTRBOVÁ, M. & HAUPTMAN, Z., Epitaxial growth of α -Fe, 104

KOTRU, P. N. v. JOSHI, M. S., 193

KOVÁČ, A. v. PANTÓ, G., 256

KOVACHEVA, I. S. v. NERUCHEV, S. G., 164

KOVAL', I. K. v. PLAKSENKO, N. A., 294

KOVALENKO, V. I., Riebeckite, arfvedsonite, 306
— & POPOLITOV, E. I., Origin of alkalic rocks, *Tuva*, 239
— Reaction of magmas with gabbro, 326

KOVAL'SKIY, V. V. & ERMakov, V. V., Selenium in rocks, soils, plants, *Tuva*, 206
— & LETUNOVA, S. V., Biogenic Co migration in muds, 205

KOVBAK, T. T. v. TIKHONOV, V. A., 8

KOYUMDJISKY, H. v. YAALON, D. H., 262

KOZERENKO, S. V. v. KOROLEV, D. F., 285

KOZIEL, K., Lunar moments of inertia, 253

KOZLOV, V. D., KLEPIKOVA, E. A., & SVADKOVSKAYA, L. N., Rubidium, lead in K-feldspars, 219

KOZŁOWSKI, K., Tourmaline-bearing rocks, *Sudetes*, 72

KRAEFT, U. & SAALFELD, H., Aventurine oligoclase, *Norway*, 51

KRAJSOVSKY, J. v. VOSZKA, R., 24

KRANKOWSKY, D. & MÜLLER, O., Lithium in meteorites, 123

KRANZ, R. L., Metal transport in hydro-thermal solutions, 198

KRATOCHVÍL, J., Topographical mineralogy, *Bohemia*, (VIII), 252

KRAUT, F. v. FREDRIKSSON, K., 214

KRÄUTNER, H., Iron ores, *Rusaia & Iacobeni*, 102
— Ores, *Poiana Ruscă*, 183

— v. IANOVICI, V., 271

KRÄUTNER, H. G., Sulphide ores, *Carpathians*, 274

KRAVTSOV, A. I. & FRIDMAN, A. I., Natural gas in prospecting, 298

KRAYNOV, S. R., KAPRANOV, S. D., & PETROVA, N. G., Rubidium in groundwaters, 205

— RUBEYKIN, V. Z., KAPRANOV, S. D., KOLOTOV, B. A., PETROVA, N. G., & KISELEVVA, E. A., Beryllium in groundwaters, 40

KRECHKOVSKIY, Z. S. v. KLITCHENKO, M. A., 313

KREHER, A. v. KREJCÍ-GRAF, K., 296

KREJCÍ-GRAF, K., Caldera, *Azores*, 326

— APPELT, W., & KREHER, A., Geochemistry, *Vienna basin*, 296

KREMNEVA, V. M. v. ABAKUMOVA, K. M., 91

KRETZ, R., Metamorphic differentiation, *Queensland*, 64
— Growth of phlogopite in marble, *Quebec*, 334

KREIGE, D. G., Gold & uranium distribution, *South Africa*, 277

KRINGSTAD, K. v. LANGMYHR, F. J., 4

KRIPANDHI, A., Malacolite, *Mysore*, 47

KRISHNAN, M. S., Tectonics, *India*, 80

KREIVENTSOV, P. P. v. BRANDT, S. B., 167

KROLL, D. & NACHSEL, G., Rock salt, *Südharz*, 328

KROLL', E. B. v. POLUBOYARINOV, D. N., 8

KROPOTOV, O. I. v. VINOGRADOV, A. P., 201

KRS, M., Earth's magnetic field, *Europe*, 80
— v. HANUŠ, V., 276, 337

KRSTANOVIC, I., Structure of lizardite, *Yugoslavia*, 268
— & PAVLOVIĆ, S., Six-layer ortho-serpentine, 49

KRUCHININ, YU. D., IVANOVA, L. B., & BOGATIKOVA, V. K., Crystallization of slags, 8
— v. NOVIKOV, A. I., 9

KRUGLOVA, A. A. v. ANDRIEVSAYA N. F., 224

KRUMMENACHER, D., Geology & petrography, *Nepal*, 322
— & NOETZLIN, J., Age of volcanic rocks, *Pacific Ocean*, 255
— v. BORDET, P., 82; COGULU, E., 166

KRUPIČKA, J., Contact zone of pluton, *Moldanubica*, 332

KRÚTA, T., Minerals, *Moravia*, (book), 88

KRUTOV, G. A. v. BORISHANSKAYA, S. S., 310

KRYLOV, A. v. DEUTSCH, S., 81

KRYUKOV, A. V., Pyrope peridotite inclusions, *Bohemia*, 62

KRYUKOV, V. B., Element distribution in rocks, *Sayan*, 292

KSHIRSAGAR, S. T. & BISWAS, A. B., Mixed manganese spinels, 15

KU, T.-L., Age of coral, *Barbados*, 166

KUBICZ, A., Variability of serpentinite rocks, *Lower Silesia*, 103

KUBISZ, J., Hydrogen-oxygen ions in minerals, 266

KUBLER, B., Anchimetamorphism & schistosity, 246

KUBO, Y., YAMAGUCHI, G., & KASAHARA, K., Formation of nepheline-carnegieite minerals, 288

KUBOVICS, I. v. SZÁDECZKY-KARDÖS, E., 319

KUCHKINA, E. S. v. SYCHEV, M. M., 8

KUDENKO, A. A. v. ZORIN, E. S., 310

KUENEN, P. H., Experimental turbidite lamination, 69

KÜHN, R., Potash deposits, *Germany*, 262
— v. HODENBERG, R. F. v., 106, 313

KUIPER, G. P., Lunar surface & Ranger programme, 254

KUKHARENKO, A. A., Alkaline magmatism, *Baltic shield*, 229

KULEV, G. V. v. BELIK, YA. G., 8

KULAKOV, M. P. v. SEMENOV, E. I., 53

KULBICKI, G. & RUMEAU, J. L., Trace elements in mud, *Bay of Biscay*, 37

— SOURISSE, C. & BARADAT, J., Determination of trace elements, 172

— v. FONTES, J. C., 176; LÉTOLLE, R., 293

KUL'CHITSKAYA, E. A., Analysis by, 48

— v. BELOLIPETS'KIY, A. P., 133

KULEMZIN, K. N. v. GLAGOLEV, A. A., 8

KULIKOVA, M. F., Gallium, indium in sulphide ores, *Soviet Central Asia*, 33

— Rare elements in Fe hydroxides, USSR, 184

KULLERUD, G., Sulphides, 87

— v. BRETT, R., 285; CRAIG, J. R., 285;

— NALDRETT, A. J., 285; YUND, R. A., 106

KUMAZAWA, M., Anisotropy of olivine, 160

KUMBASAR, I. & FINNEY, J. J., Parahopeite, 95

KUNO, H., Mafic & ultramafic nodules, *Japan*, 228

— ISHIKAWA, T., KATSUI, Y., YAGI, K., YAMASAKI, M., & TANEDA, S., Pumice & lithic fragment sizes, *Japan*, 153

— v. FORBES, R. B., 228

KUNZ, G. F., Gems, *N. America*, (book), 261

KUPKA, F., Lattice spacing in sphalerite, 140

KURAT, G., Chondrules in Mezö-Madaras meteorite, 121

— Olivine, pyroxene in meteorites, 300

KUREL'CHIKOVA, G. E. v. BARSUKOV, V. L., 20

KURODA, P. K., CLARK, R. S., & GANAPATHY, R., Tellurium in chondrites, 208

— v. CLARK, R. S., 122, 208; SABU, D. D., 207

KURODA, Y., SATO, M., OGURA, Y., & HASHIDA, E.-I., White micas, *Japan*, 136

KUROKAWA, K., Apophyllite, *Kyoto*, 308

KURYLEVA, N. A. v. RUZHITSKII, V. O., 149

KUSHIRO, I., Magma composition, 194

— SYONO, Y., & AKIMOTO, S., Garnet-pyroxene equilibrium, 195

KUTINA, J., POKORNÝ, J., & VESELÁ, M., Prospecting grids, *Czechoslovakia*, 271

KUTOLIN, V. A., Composition of upper mantle, 145

— Basaltic lavas, 315

— Crystallization order in basic rocks, 323

— Petrology of traps, *Kuzbas*, 320

— VOLOKHOV, I. M., & KARATAYEVA, G. N., Formation of hyperbasites, 316

— v. MOISEYENKO, U. I., 336

KUZ'MIN, A. M. v. SERGEEV, V. N., 75

KUZNETSOV, A. A., H_2O in intrusive magma, *Siberia*, 114

— Extrusive & intrusive traps, 315

— IVANOVA, V. P., & KASATOV, B. K., Thermal study of traps, *Siberia*, 229

KUZNETSOV, E. A. & CHIBUKHCHYAN, Z. O., Age determination from birefringence dispersion, 83

KUZNETSOV, V. A. v. POPOVA, G. B., 106

KUZNETSOV, V. G. v. DANCHEV, V. I., 37

KUZNETSOVA, I. K. v. NIKITINA, E. I., 58; SOBOLEV, N. V., 216

KUZNETSOVA, N. N. v. ROGOVA, V. P., 55

KUZNETSOVA, S. V., RUDENKO, I. M., & SKARZHIN'SKIY, V. I., Hydrothermal bitumen, *Ukraine*, 291

KVALÉ, A., Petrofabric studies, *Gotthard*, 237

KVAPIL, J., KMENT, V., & BARTA, Č., Acoustic thermal analysis, 104

— MÝL, J., & KVAPIL, J., $NaNO_3$ single crystals, 104

— v. KMENT, V., 104

KVENVOLDEN, K. A. & WEISER, D., Paraffins from fatty acids, 38

KWIECÍNSKA, B., Coked coals, *Poland*, 329

KWO, CHIN-TI v. HO, YUNG-NIAN, 83

LA BELLE, H. E., Jr. & Mlavsky, A. I., Growth of sapphire filaments, 190

LABERNARDIÈRE, H., Chlorite schists, *Massif Central*, 331

LABEYRIE, J. v. YOKOYAMA, Y., 241

LABHART, T. P., Uranium ores, *Switzerland*, 185

— Tectonic movements, *Aar*, 237

— Structural evolution of rocks, *Aar*, 247

LABUZ, A., Celestine, *New York*, 79

LACĂTUŞU, A. v. CHIRIAC, M., 248

LACEY, J. E. & CAROZZI, A. V., Autochthonous & allochthonous ooliths, *Illinois*, 240

LACHANCE, G. R. v. JAMBOR, J. L., 131; RIMSAITE, J., 33

LACROIX, J. & MICHEL, G., Surface activity of kaolinite, 89

LACY, E. D., Aluminosilicate glasses, 30

— Flow of silicate melts, 104

— Alkali silicate glasses, 266

LADD, M. F. C., Hydrogen location in hydrates, 266

LAETER, J. R. v. McCALL, G. J. H., 301

LAFOND, R., Kaolinites, *Cameroon & Gabon*, 92

— & VERGER, F., Clay minerals, *Vendée & Poitou*, 92

LAGNEAU-HERENGER, L., Potash basin, *Alsace*, 280

LAGNY, P. v. ESPOURTEILLE, F., 273

LAGOIDA, A. V. v. BUTT, YU. M., 9

LAHAYE, P. H. J. v. ROEVER, W. P. DE, 221

LAL, D., RAJAN, R. S., & VENKATAVARADAN, V. S., Cosmic-ray effects on meteorites, 120

LALOU, C. v. CHESSELET, R., 118

LAMAR, J. E., Limestone, dolomite, *Illinois*, 241

LAMBERT, L. & SCHEERE, J., Tonstein, *Colombia*, 93

LAMOUREUX, C. & KLERKX, J., Palaeomagnetism of lavas, *Etna*, 326

LANDA, É. A., Nepheline-pyroxene rocks, *Siberia*, 68

LANDIS, C. A. & ROGERS, J., Stability of pumpellyite, 288

— v. HARPER, C. T., 168

LANDWEHR, W. R., Major mineralization belts, *United States*, 272

LANG, A. R., Birefringence in diamond, 76

— v. FRANK, F. C., 335; WILD, R. K., 335

LANGBEIN, R., Middle Muschelkalk, *Thuringia*, 243

— Lower Muschelkalk, *Thuringia*, 328

LANGE, I. M. v. CHENRY, E. S., 275

LANGENEGGER, O. v. VERVOERD, W. J., 236

LANGER, D. W. & EUWEMA, R. N., Chromium in Al_2O_3 , 77

LANGER, L. v. HOLYŃSKA, B., 171

LANGMYHR, F. J. & KRINGSTAD, K., Decomposition of silicates, 4

LANGSETH, M. G. v. BUNCE, E. T., 165

LANGWAY, C. Jr. v. HODGE, P. W., 215

LANGWAY, C. C. Jr. v. FRANKLIN, F. A., 215

LANTELME, F. v. TOURAY, J.-C., 290

LAPHAM, D. M., Deformed serpentinite, *Pennsylvania*, 228

LAPIN, A. V. & ZHABIN, A. G., Chromite nodules in dunite, *Bor-Uryakh*, 237

LAPPARENT, A. F. de v. BLAISE, J., 322

LAPPIN, M. A., Dunites, *Norway*, 228

LARIMER, J. W., Chemical fractionation in meteorites, (I), 120

— & ANDERS, E., Chemical fractionation in meteorites, (II), 120

LARIONOV, V. V. & SHVARTSMAN, M. D., Radioactive elements in carbonate rocks, *Caucasus*, 202

LAROCHELLE, A. & CURRIE, K. L., Palaeomagnetism of igneous rocks, *Quebec*, 252

LARSEN, G. & CHILINGAR, G. V., Diagenesis in sediments, (book), 88

LARSEN, S., Solubility of hydroxyapatite, 7

LARSKAYA, E. S., Argillaceous sediments, *Ciscaucasia*, 244

LARSON, E. E. & STRANGWAY, D. W., Magnetic polarity in basalts, 60

— v. OZIMA, M., 168

LAISONNEUR, C., Submarine granite, *Manche*, 318

— BAUDET, P., MIGNOT, C., & DANGEARD L., Turbidity current, mud-flow, & sliding effects, 240

LARUMBE, F. v. TOUBES, R. O., 313

LASKOVIC, F. v. ANGEL, F., 232

LASN, I. I. v. DILAKTORSKIY, N. L., 9

LASSAK, E. V. & GOLDING, H. G., Phosphatic bands in sediments, *New South Wales*, 155

LASSERRE, M., Age of crystalline massifs, *Cameroon*, 165

LATORRE, C. O. v. TOUBES, R. O., 313

LATYSH, I. K. Moissanite, *Azov*, 54

LAUDER, W. R., Volcanic arcs, *Japan*, 64

LAURENT, Y., LOUGNON, J., PIERROT, R., & SCHUBNEL, H. J., Crocoite, *Dordogne*, 162

LAUZAC, F., Faults near Pb-Zn ores, *Sardinia*, 98

LAVES, F. & VISWANATHAN, K., Triclinicity of K-feldspars, *Switzerland*, 51

— v. BRUNNER, G. O., 14; GUBSER, R., 15

NISSEN, H.-U., 51

LAVERUKHINA, A. K., REVINA, L. D., IBRAYEV, T. A., & YUKINA, L. V., Nuclear-active particles in meteorites, 212

LAWN, B. R. & KOMATSU, H., Deformation in diamond, 160

— v. FRANK, F. C., 335

LAWRENCE, L. J., Sulphide neomagmas, *South Wales*, 273

— BAYLISS, P. & TONKIN, P., Todorokite in basalt, *Australia*, 223

— v. BAYLISS, P., 163

LAY, C., LEDENT, D., & GRÖGLER, N., Age of zircons, *Sahara*, 81

LAZĂR, C., Hydrothermal mineralization, *Apuseni mts.*, 98

LAZAREV, K. F. v. NIKOLAYEV, D. S., 296

LAZAREVICH, N. S. v. NIKANOROV, A. S., 6

LE, SHANG-THEN v. MA, CHONG-CHING, 160

LEAKE, B. E., Orthopyroxenes, 134

— v. MOORBATH, S., 261

LEAKE, J. A. v. COOPER, M., 249

LEAVENS, P. B. & WHITE, J. S., Jr., Switzerite, *North Carolina*, 314

LEBEDEV, A. P. & TROFIMOV A. S., Diamantiferous diatremes, *Czechoslovakia & Siberia*, 22

LEBEDEV, E. B., Water-silicate melts, 24

LEBEDEV, V. I., PROKOF'YEV, L. M., KIRILLOV, A. S., & TARASOV, A. V., Potassium isotopes in micas, 33

LEBEDEV, V. N. v. BLINOV, G. A., 102

LEBEDEV, V. S. v. NECHELYUSTOV, G. N., 222

LE BIHAN, M. T. v. BARIAND, P., 54

LEBL, M. v. BOHUN, A., 104

LE BOUFFANT, L. v. ALEXANIAN, C., 58

LECERF, A., RAULT, M., & VILLERS, G., Mn-Ti-spinels, 191

— v. VILLERS, G., 105

LECKEBUSCH, R. v. RECKER, K., 313

LEDENT, D. v. CAHEN, L., 81; LAY, C., 81

LE DRED, R. v. WEY, R., 111

LEE, D. E. v. COLEMAN, R. G., 159

LEE, JOUNG HWAN & KIM, JONG HWAN, Copper in basalt, *Korea*, 338

LEELANANDAM, C., Enstatite, endiopside diopside, *Kondapalli*, 46

— Zoned plagioclase, *Andhra Pradesh*, 219

FEFELHOCH, J. F., FRIEDEL, R. A., & KORMAN, T. P., Iron in coals, 117

FEFÈVRE, C. v. BROUSSE, R., 156, 317

FE FUR, Y. v. ALÉONARD, S., 17

FE GOO, P. J., Feldspars, Connemara & Galway, 50

FEIGERSKI, J. & VANĚČEK, M., Lead isotopes in galenas, *Bohemica*, 183

FEHMANN, E., Diabase, *Sauerland*, (I), 68

FEHMPPUHL, G. v. GOODMAN, P., 180

FEHTINEN, M. v. SAHAMA, T. G., 133, 308

FEISEGANG, E. C. & OREN, M. J., Trace elements in sea-water, 41

FELEU, M. & MORRIS, A., Sulphides in stalactites, *Greece*, 98

FERNNE, W. v. LANOVIC, V., 102

FERNEV, L. M. v. RUSAKOV, L. N., 8

FERN'KIN, E. N. v. DODIN, D. A., 145

FERNSCH, G., Clay-ironstone concretions in shale, *Saar*, 245

— & ROST, F., Inclusions in durbachite, *Czechoslovakia*, 318

FERNARD, B. F., MEAD, C. W., & CONKLIN, N., Ag-rich sulphides, *Idaho*, 277

FERONT'YEV, A. N., Regional ore zones, *Altai*, 183

FER RICHE, M. H., Determination of trace elements, 259

FERMAN, A., Chemical evolution, *Dead Sea*, 118

FERMAN, J. C., MOOK, W. G., & VOGEL, J. C., Radiocarbon in tree rings, 164

FERESKE, N. G., Biography of, 338

FERLE, W. C., HAWORTH, C. W., GULA, J. A., & HENDRICKSON, A. A., Cu-Ag contacts, *Michigan*, 54

FERLUS, F. G., Mica, *North Carolina*, 281

FEROLLE, R., Potassium isotope variations, 34

— & KULBICKI, G., Chromium, nickel, cobalt in lavas, *Mont-Dore*, 293

— v. GLANGEAUD, L., 78

FERUNOVA, S. V. v. KOVAL'SKIY, V. V., 205

FERUBE, A. & CISSARZ, A., Formation of mineral deposits, *Kaapvaal*, 272

FERUTWEIN, F., Element distribution in clays, 37

— v. BONHOMME, M., 257; ROUBAULT, M., 81

FERV-DONATI, G. R., Assisi meteorite, 43

FERVIN, B. J., Thermal effects on lunar figure, 254

FERVITT, C. M. & NABARRO, F. R. N., Impact strength of diamond, 160

FERVY, C., Idaite, 310

FERWIS, C. F. v. MOORE, C. B., 124, 209

FERWIS, D. v. BALL, T. K., 146

FERWIS, J. v. CHERNOV, A., 249

FERWIS, J. B. v. HAWTIN, P., 190

FERWIS, M. H., Defects in spinel crystals, 105

FERWIS, R. W., Jr. & SANTOS, A. M., Copper prospecting, *Caraiba*, 298

FERYGRAND, C. v. TEKIZ, Y., 191

FERYMARIE, P., Method for rock surface photography, 169

FERZAL, D. v. STÖCKELOVÁ, J., 104

FERHÁT, Z. v. CUCHÝ, Z., 104

FER, PU & CHUNG, FU-TAO, Metamorphic rocks, *Tsining*, 248

FERIBICKÝ, A., CdSe single crystals, 104

FERBERMAN, K. W. & FERMAN, W. D., Bromine in stony meteorites, 207

FERBERMAN, O., Synthesis of dolomite, 27

FERE, H. C., Biotites, *New England*, 48

— Analysis of magnetite, 87

FERHTOWLERS, E. C., COLLINS, A. T., DENHAM, P., & WALSH, P. S., Photoconductivity, thermoluminescence of diamond, 251

FERIKENS, G. E. v. JOHNSON, N. M., 174

FILLY, H. D., Submarine bed-rock, *Newfoundland*, 80

— & DEUTSCH, E. R., Palaeomagnetism, *Newfoundland*, 77

FIMA-DE-FARIA, J., Inorganic close-packed structures, 14

FIMBACH, D. VON v. WONES, D. R., 65

FIMPO DE FARIA, F., Uranium minerals, *Portugal*, 101

FIN, H. C. & FOSTER, W. R., System $\text{BaO}-\text{Al}_2\text{O}_3-\text{SiO}_2$, (I), 288

FIN, N. G. v. VORONTSOV, A. E., 199

FIN, S. C., Origin of tektites, 213

FINARES, R. C., CeO_2 , ThO_2 single crystals, 26

— Bromellite, 105

— Beryl, 109

FINKS, G. F., Lead-silver mines, *Massachusetts*, 163

FIND, E. L. v. DAVIS, E. A., 251

FIND, G., Gravity anomaly, *Sweden*, 161

FINDENFELSER, C. T., Pyritized clams, *Illinois*, 78

FINDSAY, J. R. v. STAPLES, L. W., 129

FINDSJO, O. v. KINNUNEN, J., 259

FINDGEN, G. J. VAN DER, Arsenic-copper ores, *Pyrenees*, 274

FINKER, E. S. & GORDON, J. B., Jr., Baryte, *Georgia*, 78

FINKIN, T. A., Jr., MOORE, C. B., & SCHMITT, R. A., Vanadium in meteorites, 301

FIPMAN, P. W., Water-pressure in magmas, 315

— & ARAKAMI, S., Ash-flow tuff, *Japan*, 69

FIPNITSKAYA, L. F. v. KONTOROVICH, A. E., 116

FIPOVSKI, I. E. v. DOROFEEV, V. A., 9

FIPPMAN, F., Norsethite, 181

FIPPSCHUTZ, M. E., Cohenite from meteorites, 302

— v. JAEGER, R. R., 42, 123

FIPSYNA, N. A., Weathering of amphibolite, 200

FIPST, F. K., Zircons, apatites from granodiorite, *Bavaria*, 68

FIPSTER, J. S. & BAILEY, S. W., Chlorite polytypism, (IV), 268

FIPTOVCHENKO, E. I., Tapiolite from pegmatite, *Ukraine*, 142

FIPVIN, A. L., Isomorphism in Ca amphiboles, 94

FIPVINSKAYA, G. P. & BELOV, N. V., Metamict zircons, 28

FIPVIN, A. L. & POVARENYYKH, A. S., Substitution in calcic amphiboles, 267

FIPU, XUN-JIAN v. QIAN, Zi-QIANG, 128

FIPWELLYN, P. G., MAHMOUD, S. A., & STABBINS, R., Nodular anhydrite, *Cumberland*, 242

FIPBOVA, E. V., Desert soils, *USSR*, (book), 173

FIPOC, V. v. ANTHONY, A.-M., 105

FIPFÖREN, A. v. HAAPALA, I., 312

FIPGINOV, V. P. & RUSINOV, V. L., Pyrite, *Kunashir island*, 99

FIPGINOV, L. A. v. ZUL-FUGARLY, N. D., 225

FIPGOMBARD, A., NABHOLZ, W., & TRÜMPY, R., Geology, *Switzerland*, (book), 173

FIPGONG, G., NEGLIA, S., & FAVRETTO, L., Metamorphism of kerogen, *Sicily*, 295

FIPGONG, J. V. P. v. TILLEY, C. E., 67

FIPGONG, L. E., Determination of Sr isotopes, 255

FIPPATRINNOVA, L. YA., Cement clinker, 8

FIPATO, L. M. v. YAREMENKO, Z. A., 8

FIPPE NUNES, J. E. v. CORREIA NEVES, J. M., 58, 220

FIPRE, W. & HOTH, K., Skarns, *Erzgebirge*, 329

FIPRENTZI, E. Z. v. LORENZONI, S., 248

FIPRENTZI, S., Glauconite schists, *Alps*, 157

— Jadeite-gastaldite-bearing metagreywackes, *Alps*, 157

— & LORENZONI, E. Z., Paragneiss formations, *Merano*, 248

FIPSE, E. G. v. ROTH, C. B., 262

FIPOTTI, G. v. ROTINI, O. T., 90

FIPUGHAN, F. C., Alancite in coal measure sediments, *New South Wales*, 323

— & SEE, G. T., Dawsonite, *New South Wales*, 163

FIPUGNON, J. v. LAURENT, Y., 162

FIPU, M. v. CALIFET, Y., 240

FIPVERING, J. F. & WIDDOWSON, J. R., Anandite, *Ceylon*, 219

— v. FERMAN, W. D., 123; GULSON, B. L., 86; MORGAN, J. W., 123

FIPVERING, T. S. & ENGEL, C., Silicon accumulation in plants, 206

FIPW, P. F., Diffusion coefficients in *Na-montmorillonite*, 263

FIPU, SU-WEN v. TSAI, TZU-HWANG, 161

FIPU, WAN-CHUEN v. WANG, P., 226

FIPU, J. v. MILLOT, G., 12

FIPWIG, G., Preparation of polished sections, 255

FIPWIGSON, G., Flint nodules, *Connecticut* & *England*, 163

FIPUECKE, W. v. HAHN-WEINHEIMER, P., 62

FIPUGINA, I. G. & BARBANYAGRE, V. D., Structure of CaO , 9

FIPUGOVSKAYA, E. S. v. PARKHOMENKO, M. A., 8

FIPUKANOV, T. T. v. SHARAI, V. N., 8; ZHUNINA, L. A., 9

FIPUMDEN, G. I., TULLOCH, W., HOWELLS, M. F., & DAVIES, A., Geology, *Langholm*, 88

FIPUNA, L. C. v. ROBSON, G. R., 339

FIPUNDBERG, B., Iron ores, *Sweden*, 101

FIPURIE, D. & YARIV, S., Titration of montmorillonite, 262

FIPUTERNAUER, J. L. v. PILKEY, O. H., 23

FIPUTHRA, J. M. & GUPTA, N. M., Luminescence decay in calcite, 161

FIPYAKHNTSKAYA, I. V. v. GRINENKO, L. N., 291

FIPYAKHNOVICH, V. V., Accessory minerals of extrusive rocks, 228

FIPYDKA, K., Dickite, *Walbrzych*, 11

FIPYLYON, R. J. P., Emission analysis, 87

FIPYSAKOV, V. S. v. BAKUMENKO, I. T., 336

FIPYTTLETON, R. A., Capture of Moon by Earth, 254

FIPYUBARSKAYA, G. A. v. KLITCHENKO, M. A., 313

FIPMA, CHONG-CHING, WU, HSEIH-YI, CHUNG, CHIA-YOU, & LE, SHANG-THEN, Rock cleavage, 160

FIPMA, SHIH-NIAN v. QIAN, Zi-QIANG, 128

FIPMACARA, B. J., Paragenesis of amphiboles, *Australia*, 217

FIPMATEE, J. L., Jr. & CHENG, F. S., Interstratification of organo-montmorillonite, (I), 91

— Interstratification of organo-montmorillonite, (II), 174

FIPMCIRNEY, A., AOKI, K.-I., & BASS, M. N., Elogmites, jadeite, *Guatemala*, 46

FIPMCIRNEY, A. R., Volcanic rocks, *Pacific Ocean*, 325

FIPMCALL, G. J. H., Froth flows, *Kenya*, 59

— Bencubbin meteorite, 120

— Avoca octahedrite, 301

— & CLEVERLEY, W. H., Stony meteorite finds, 124

— & LAETER, J. R. de, Western Australian meteorite collections, (I), 301

McCAMMON, R. B., Principal component analysis, 79

MCCARTHY, E. D. & CALVIN, M., Organic geochemical studies, (I), 205

MACCIONI, L., Eruptive rocks, *Sardinia*, (I), 61

McCONNELL, D., Crystal chemical calculations, 4

— Precipitation of phosphates, 294

MACDONALD, G. J. F., Dynamical evolution of Moon, 254

MCDONALD, J. A., Chromitite seam formation, *Bushveld*, 68

MCDONALD, J. G., Variations in lava flow, *Scotland*, 60

MCDONALD, R. v. COX, K. G., 148

MCDONALD, W. S. & CRUCKSHANK, D. W. J., Structure of Na_2SiO_3 , 178

— Structure of hemimorphite, 267

MCDougall, D. J., Thermoluminescence, (book), 261

McDOUGALL, I. & CHAMALAUN, F. H., Geomagnetic polarity, 77

— v. COMPSTON, W., 200; STIPP, J. J., 256; WEBB, A. W., 166

MACDOWELL, J. F. v. WOSINSKI, J. F., 44

MCLEHINNY, M. W. v. JONES, D. L., 253

MACGREGOR, A. G., Faults & fractures, *NW Scotland*, 147

MCGREGOR, D. M. & WILSON, C. D. V., Gabbros, *Aberdeenshire*, 161

MACGREGOR, I. D., Model mantle compositions, 228

MCGREGOR, J. A. v. MILLER, W. E., 274

MACHADO, F., Volcanic eruptions, *N. Atlantic*, 153

— Pulsating gravitation, 164

— & TORRE DE ASSUNÇÃO, C. F., Geological map, *Cape Verde islands*, 61

MACHAIRAS, G., Powder sampling from thin sections, 3

— Recrystallization of Au, 100

MACHIGAD, B. S., Garnet-biotite equilibria, *Madras*, 303

— v. SOMASEKAR, B., 48

MACHIN, D. J. v. CARMICHAEL, I. S. E., 76

MCINTIRE, W. L., Rubidium in sylvine, 262

— v. MATTOX, R. B., 261

MCKAGUE, H. L., Hydrogrossular, *Transvaal*, 133

MACKAY, A. L. & SINHA, D. P., Whitlockite, 77

— v. BERNAL, J. D., 105

McKELLAR, J. B., MEADOWS, A. J., & SYLVESTER-BRADLEY, P. C., Barwell meteorite, 299

McKELVEY, V. E., Phosphate deposits, 102

MACKERETH, F. J. H., Post-glacial lake sediments, *England*, 242

McKERROW, W. S. v. MOORBATH, S., 261

McKOWN, D. v. SCHMITT, R. A., 209

MCLENDEN, H. G. v. ARONSON, J. R., 80

MCNEIL, R. D., Gold-copper mine, *Australia*, 18

— Copper ores, *Western Australia*, 274

MCQUEEN, R. G., MARSH, S. P., & FRITZ, J. N., Shock effects in rocks, 250

MADDOCK, A. G. v. BANCROFT, G. M., 177, 180

MADIGAN, D. C., Particle size analysis of clays, 89

MAEDA, F., TAKEYAMA, S., & GOTO, H., Determination of Ni, 86

MAEDA, K. v. IGLI, S., 132

MAGIDOVICH, T. S. v. ASHIKMINA, N. A., 7; BRAUN, K. N., 7; RUB, M. G., 7

MAHABALESWAR, B. & SADASHIVIAH, M. S., Mylonite, *Sivasamudram*, 157

MAHADEVAN, T. M., SRINIVASACHARI, K., & SESHAIAH, P., Zircons from pegmatites, 45

MAHAN, S. M. & ROGERS, J. J. W., Grain contacts in granitic rocks, 246

MAHMOUD, S. A. v. LLEWELLYN, P. G., 242

MAHON, W. A. J., Hot water action on rocks, *New Zealand*, 72

MAJEROWICZ, A., Granitoids, *Zarow*, 63

MAJUNDAR, H. H. & O'KEEFFE, J. A., Strain birefringence in moldavites, 44

MAJOR, A. v. RINGWOOD, A. E., 287

MAJOR, R. L., Minerals, *S. Illinois*, 23

— Minerals, *SE Illinois*, 23

MAKAROCHKIN, B. A. v. MIRKINA, S. L., 3

MAKAROV, E. S. v. KHALILOV, A. D., 16, 182, 268

MAKAROV, N. N. & SIZOVA, R. G., Datolite, *Crimea*, 46

— v. BAYRAKOV, V. V., 306; SUPRYCHEV, V. A., 304

MAKHENZON, M. R. v. ABAKUMOVA, K. M., 91

MAKHMUDOV, A. I. v. BORISHANSKAYA, S. S., 310

MAKOVICKÝ, E. & STRESKO, V., Slavikite, *Czechoslovakia*, 313

MAKSIMOV, N. V. & ILYUKHIN, V. V., Thorolite, 15

MALAKHOV, I. A. v. SHTEYNBERG, D. S., 149

MALAKHOV, V. V. v. TRUKHACHEVA, V. A., 4

MĂLDĂRESCU, I. & MĂLDĂRESCU, M., Hydrothermal alteration, *Baia Mare*, 72

MĂLDĂRESCU, M. v. MĂLDĂRESCU, I., 72

MALDEN, P. J. & MEADS, R. E., Iron in kaolinite, *St. Austell*, 10

MALIKOWA, I. N., Origin of potash deposits, *Carpathia*, 294

MALININ, S. D. v. KHITAROV, N. I., 193; UCHAMEYSHVILI, N. E., 107

MALLICK, D. I. J., Gneiss dome, *Zambia*, 63

MALÝŠHEVA, T. YA. v. GUL'YAI, I. I., 9

MALYUTIN, R. S., Chromite-bearing rocks, *Azerbaijan*, 275

MAMEDOV, A. A. v. TEODOROVICH, G. I., 264

MAMEDOV, KH. S. v. KHALILOV, A. D., 182, 268

MAMMERICKX, J. v. MENARD, H. W., 339

MAMYRIN, B. A. v. ALIMOVA, I. A., 5

MĂNĂILĂ, R., Cation migration in spinels, 180

MĂNEK, B. & BERNAT, Z., Polycrystalline mica, 104

MANHES, F. v. GLANGEAUD, L., 147

MANSUR, L. C. v. PLENDL, J. N., 76

MANTINE, I. v. GLAESER, R., 263

MANTON, W. I. & SIEDNER, G., Age of quartz-bearing rocks, *S.-W. Africa*, 81

MANUEL, O. K., Rare gases in Fayetteville chondrite, 122

— v. ALEXANDER, E. C., Jr., 301; BENNET, J. H., 202; CANALAS, R. A., 289

MANULIOVA, N. S., SUKHANOVA, S. M., & VARLAMOV, V. P., Swelling of bentonites, 8

MANUYLOVA, M. M., PETROV, L. L., RYBAKOVA, M. M., SOKOLOV, YU. M., & SHMAKIN, B. M., Pegmatite minerals, *Baikal*, 50

— v. GURULEV, S. A., 217

MARAKUSHEY, A. A. & PERCHUK, L. L., Paragenesis of minerals, 39

MARCHENKO, E. YA., Inclusions in zircon, *Ukraine*, 45

— & SHCHERBAKOV, V. P., Gallium in granitoids, *Azov*, 200

MARDIX, S., ALEXANDER, E., BRAFMAN, O., & STEINBERGER, I. T., ZnS polypyrite families, 181

— BRAFMAN, O., & STEINBERGER, I. T., Synthetic, ZnS polypyrite, 181

MAREE, B. D. v. SMIT, P. J., 253

MAREL, H. W. VAN DER v. BEUTELSPACHER, H., 88

MAREZAK, M. & GREGOROWICZ, Z., Trace elements in Pb-Zn ores, *Silesia & Cracow*, 290

MARFUNIN, A. S., BERSHOV, L. V., MEILMAN, M. L., & MICHOUlier, J., Iron in feldspars, 15

— v. BERSHOV, L. V., 14, 265

MARIANO, A., Volcanic ash soils, *Philippines*, 265

MARINELLI, G., Origin of volcanics, *Apennines*, 325

MARIĆKOVIĆ, M. D. & ANTIĆ-JOVANOVIĆ, A. M., Determination of Be, 4

MARION, C., PICOT, P., & SCHUBNEL, H.-J., Black star diopside, 196

MARKHASEV, B. I., Properties of oxides, 111

MARKOV, A. V., Lunar mountain rings & craters, 254

MARKOVA, N. G. v. VINOGRADOV, A. P., 3

MARKOVSKIY, B. A. v. ROTHMAN, V. K., 320

MARMO, V., Migmatites, 145

MARMOR, S. A. v. KILLER, M. A., 8

MARSH, S. P. v. MCQUEEN, R. G., 250

MARSHALL, B., Zircon populations, *England*, 241

MARSHALL, W. W. v. CROFTS, J. D., 29

MARTI, K., Xenon in chondrites, 300

MARTINET, B., Analysis by, 55

MARTINI, E. & MENTZEL, R., Tuffs, *basalt Germany*, 319

MARTIN MARTINEZ, E. v. PÉREZ-RODRIGUEZ, J. L., 93

MARTINS NUNES, A. v. CANILHO, M. H., 141

MARUMO, F., Structure of nowackite, 270

— & NOWACKI, W., Rathite-I, 16

— — Structure of duffrenoysite, 270

— — Structure of hatchite, 270

— v. BURRI, G., 126

MARUYAMA, T. v. MURAKAMI, N., 135

MARVIN, U. B. & EINAUDI, M. T., Magnetic spheres from sands, *Brazil & Únited States*, 153

— v. FRONDEL, C., 225

MASAYTIS, V. L., Palaeozoic trap-rocks, *Siberia*, 149

MAŠEK, V., Trace elements in oils, 206

MASO, J.-C. v. AITCIN, P.-C., 108

MASON, B., Olivines in chondrites, 299

— Pyroxenes in meteorites, 299

— Bununite meteorite, 299

— & BERRY, L. G., Elements of mineralogy (book), 261

— & JAROSEWICH, E., Winona meteorite, 299

— & MAYNES, A. D., Composition of meteorites, 120

— & NELEN, J., Weatherford meteorite, 303

— & WIILK, H. B., Bath, Frankfort, Kakangari, Rose City, & Tadjera meteorites, 12

— — Barratta, Carraween, Kapoeta, Mooresfort, & Ngawi meteorites, 121

— — Belly River, Bluff, Bremervörde, & Modor meteorites, 121

— v. FREDRIKSSON, K., 210; WHITE, J. S., Jr., 129; WIILK, H. B., 43

MASON, R., Coronas in troctolite, *Norway*, 5

— Gabbro intrusion, *Sulitjelma*, 146

MASSE, R. & DURIF, A., Fresnoite, 94

MASSEERA, B. E. & VINCI, A., Acantharite skeleton, 80

MASSEY, H., GOLD, T., & RUNCORN, S. K., Physics of Moon, 253

MASUDA, A., Lanthanide abundances, 32

— Rare-earths in basalts, *Japan*, 325

— & MATSU, Y., Lanthanides in crust & mantle, 42

MASURENKO, V. D. v. SHARAI, V. N., 8

MAZELEV, L. YA., 8; ZHUNINA, L. A., 9

MATĚJKA, F., Impurities in Ge single crystals, 104

ATEJOVSKA, O., Garnets from granulite complex, *Czechoslovakia*, 332

ATHER, A. L. v. TOOMS, J. S., 112

ATHISON, C. I., Layered basic intrusion, *Queensland*, 64

ATHUR, H. B. v. YAGNIK, C. M., 190

ATISTO, A., Meta-arkose, *Tampere*, 246

ATSHINSKI, M., Sea beach grains, 327

ATSENKO, N. A. v. DUBINSKIY, A. YA., 246

ATSUI, T. & TOTANI, M., Vermiculitic clay, *Japan*, 90

ATSUI, Y. & BANNO, S., Exchange equilibrium in solid solutions, 112

— & SYONO, Y., Olivine group solid solutions, 286

— v. MASUDA, A., 42

ATSTO, S. v. SUZUKI, M., 301; TAKEMATSU, N., 298

ATUSHIMA, S., KENNEDY, G. C., AKELLA, J., & HAYGARTH, J., Systems $\text{Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, $\text{Al}_2\text{O}_3\text{-H}_2\text{O}$, 28

ATTEUCCI, E., Rare-earths, Y, in tourmalinite, 198

ATTHEWS, D. W., Zoned ultrabasic bodies, *Skye*, 60

ATTHEWS, W. H. & CURTIS, G. H., Ages of basalt, andesite, *New Zealand*, 2

ATTOX, R. B., HOLSER, W. T., ODÉ, H., MCINTIRE, W. L., SHORT, N. M., TAYLOR, R. E., & VAN SICLEN, D. C., Saline deposits, (book), 261

ATUŠEK, M. v. ŠÍP, V., 104

ATZAT, E., Structure of Te mineral, 180

AUACHER, A. v. FRUTH, I., 273

MAUREL, C. & MAUREL, P., Analyses of standard rocks, 32

MAUREL, P. v. MAUREL, C., 32

MAURETTE, M. v. FLEISCHER, R. L., 208

MAURY, R., Resistivity of albites, 252

— & JIYAMA, J. T., Resistivity of feldspars, 77

MAUS, H., Ignimbrite, *Black Forest*, 319

— Quartz porphyries, *Black Forest*, 330

— v. BLUM, W. E., 328

MAXWELL, C. H. v. SHERIDAN, D. M., 101

MAXWELL, D. T. & HOWER, J., Diagenesis & metamorphism of illite, 71

MAXWELL, J. A. v. EADE, K. E., 74; FOLINSBEE, R. E., 125; FORMAN, S. A., 137

MAY, F. v. PEACOCK, J. D., 317

MAY, I. & CUTTITTA, F., Geochemical analysis, 87

MAXWAUX, P. & RENSON-SALME, R., Determination of F, 4

MAYER, A. E. S. v. CLARK, A. H., 2

MAYNES, A. D., Analysis by, 210

— v. MASON, B., 120

MAYS, R. E. v. SKINNER, B. J., 296

MAZANEK, E. v. WYDERKO, M., 286

MAZELEV, L. YA. & MASURENKO, V. D., Barium glasses, 8

MAZOR, E. & ANDERS, E., Rare gases in *Jodzis* howardite, 122

— & ROSENTHAL, E., Sulphur cycle in waters & rocks, *Israel*, 297

— v. GROSS, S., 245; HEYMANN, D., 122, 213

MAZZUOLI, R. v. BARZON, G. P., 11; FRANZINI, M., 49

MCHEDLISHVILI, T. D. v. IVANITSKIY, T. V., 200

MCHEDLOV-PETROSYAN, O. P. v. SOFRONOV, V. S., 8

MEAD, C. W. v. LEONARD, B. F., 277

MEADE, R. H., Sediments, *California*, 12

MEADOWS, A. J. v. MCKELLAR, J. B., 299

MEADS, R. E. v. MALDEN, P. J., 10

MEASON, J. L. & RAO, M. N., Leighton chondrite, 300

MEDLIN, W. L., Colour in calcite, 58

MEDVEDOVSKAYA, E. I. v. ZASEDATELEVA, N. A., 9; ZIN'KO, E. I., 8

MEHNEET, K. R., Origin of granitic rocks, (book), 262

MEGRUE, G. H., Rare gases in meteorites, 300

MEIER, R. v. HARTKE, H., 328

MEILMAN, M. L. v. MARFUNIN, A. S., 15

MEINTZER, R. E. v. MITCHELL, R. S., 141

MEISTER, R. v. PESELENICK, L., 76

MEKHTIYEVA, V. L. v. PANKINA, R. G., 41

MELEN'T'YEV, B. N., IVANENKO, V. V., & PAMFILOVA, L. A., Solubility of sphalerite, 291

MEL'NICHENKO, A. K. v. MOGAROVSKIY, V. V., 35

MEL'NIKOV, YU. M., Hydromica, *Volhyn*, 136

MEL'NIK, YU. P. & YAROSHCHUK, M. A., Olivine-magnetite rocks & ores, *Ukraine*, 187

MEL'NIKOVA, V. M. v. KONTOROVICH, A. E., 116

MEL'NITSKAYA, E. F., Mn-Fe wollastonite, 47

MÉLON, J., Calcite from caves, *France*, 337

— Gypsum, aragonite from cave, *Ariège*, 339

MENARD, H. W., Crust under small ocean basins, 253

— & MAMMERICKX, J., Topography & magnetic anomalies, *Pacific Ocean*, 339

MENNER, V. V., Evaporites, *Siberia*, 280

MENON, K. K., Diagenetic pyrite, *Kerala*, 57

MENSIK, J. D. v. HUFFMAN, C. Jr., 5

MENTZEL, R. v. MARTINI, E., 319

MERCY, E. L. P. & O'HARA, M. J., Element distribution in ultramafic rocks, *Norway & South Africa*, 114

— v. O'HARA, M. J., 318

MERING, J. v. GLAESER, R., 263

MERKULOVA, K. I. v. CHALOV, P. I., 169

MERRILL, R. T. v. GROMMÉ, C. S., 168

MERRITT, C. A., Rim albite, *Oklahoma*, 65

— Granite, *Oklahoma*, 65

METZ, P., Tremolite-dolomite reaction, 29

METZGER, W. J. & BARNARD, W. M., Aragonite-calcite transformation, 192

MEZZADRI, G., Sandstones, *Apennines*, 70

— Sediments, *Apennines*, 70

MICHAELIS DE SÁENZ, I. = SÁENZ, I. M. DE

MICHARD, A., Geology, *Alps*, (book), 173

MICHARD, G. & FAUCHERRE, J., Manganese in limestone, *Ariège*, 38

MICHEL, A. v. DELAMOYE, P., 180

MICHEL, G. v. LACROIX, J., 89

MICHELE, V. DE, Beryl, *Baveno*, 304

MICHOT, J. & KLERKX, J., Petrography, *Sör Rondane mts.*, 67

— & PASTEELS, P., Dating of metamorphism, 166

— v. DIMANCHE, F., 308

MICHOT, P., Plagioclase-rich magma, *Norway*, 68

MICHOULIER, J. v. MARFUNIN, A. S., 15

MÍČIĆ, I. v. KARAMATA, S., 319

MÍČKA, J. v. KADAŇKA, J., 104

MIDDLEMOEST, E. A. K., Ultramafic rocks, *Richtersveld*, 235

— Plutonic & dyke-rocks, *Richtersveld*, 236

MIDGLEY, H. G., High-alumina cement, 25

MIERZEJEWSKI, M. P., Tectonic evolution of granite, *Sudetes*, 237

MIESCH, A. T., CHAO, E. C. T., & CUTTITTA, F., Composition of tektites, 44

MIGDISOV, A. A. v. RONOV, A. B., 201

MIGNOT, C. v. LARSONNEUR, L., 240

MIHÁILESCU, E., Pebble sizes, 153

MIKHAJLOV, N. P. & ROVSHA, V. S., Pyrope-bearing peridotites, *Bohemia*, 62

MIKHAJLOV, I. I. v. NIKANOROV, A. S., 6

MILLER, A., Copper valency in spinel, 190

MILLER, J. A. v. BROWN, P. E., 168; FITCH, F. J., 2; SARKAR, S. N., 2; STURT, B. A., 2

MILLER, W. E. & MCGREGOR, J. A., Copper ores, *Zambia*, 274

MILLER, Y. M., USTINOV, V. I., ARTEMOV, Y. M., & KAZAKOV, G. A., Calcium isotope variations, 38

MILLOT, G., LUCAS, J., & PAQUET, H., Mineral aggradation, 12

MILNE, A. A. v. JONES, L. H. P., 196

MILOVSKIY, A. V. & VOLYNETS, V. F., Nitrogen in metamorphic rocks, 40

MILTON, C., APPLEMAN, D., CHAO, E. C. T., CUTTITTA, F., DINNIN, J. L., DWORNIK, E. J., HALL, M., INGRAM, B. L., & ROSE, H. J., Jr., Merumite, *Guyana*, 127

— v. SMITH, J. W., 58

MINATO, H. & KATO, A., Truscottite, *Shizuoka*, 310

— & TAKANO, Y., K-clinoptilolite, *Japan*, 130

MINATO, T. v. TAKIMOTO, K., 140

MINEEVA, I. G. & KARTENKO, N. F., Moisante, *Siberia*, 54

— & KOROBKOV, V. I., Radioactive elements in alkaline rocks, 36

MINEYeva, R. M. v. BERSHOV, L. V., 14

MINTS, M. V. v. EGOROV, I. N., 200

MINTSER, É. F., Benjaminite, *Adrasman*, 225

MIRÁUTÁ, O. v. IANOVICI, V., 271

MIRGORODSKAIA, N. K. v. ABAKUMOVA, K. M., 91

MIRKINA, S. L. & MAKAROCHKIN, B. A., Use of high-Pb minerals for dating, 3

MIRONCHUK, M. G., Ni-bearing intrusions, *USSR*, 307

MIRONOVNA, V. I. v. NEPROCHNOV, YU. P., 145

MIRZA, M. B. v. JACKMAN, H. W., 23

MÍSAŘ, Z., Ultrabasic bodies, *Moravia*, 62

— v. FEDUTÍK, F., 332

MISCH, P., Epidote glomeroblasts, 73

MISHIN, I. V. v. KHODAKOVSKIY, I. L., 24

MÍŠKOVSKÝ, J. v. ČERNÝ, P., 11, 137

MISRA, G. S., Chevkinite, *Orissa*, 53

MITCHELL, E. W. J. & WHITEHOUSE, J. E., Neutron irradiated quartz, 77

MITCHELL, R. K., Taaffeite, 31

MITCHELL, R. S., Fergusonite, *Virginia*, 106

— & MEINTZER, R. E., Lithiophorite, *Virginia*, 141

MITICH, G. B., Stoping in rock crystal formation, 330

MITRA, F. N., Manganese ores, *Maharashtra*, 279

MITROFANOV, E. A. & OSMONBETOV, K. O., Hg-Sb mineralization, *Kirghizia*, 272

MITROSHIN, M. I. v. ANASTASENKO, G. F., 150

MITYUSHINA, T. M., Analysis by, 136

MIURA, E. v. HIBINO, T., 28

MIYAHISA, M., Braunit-ganophyllite ores, *Japan*, 49

— Lattice constants of cassiterites, 141

MIYAKAWA, K., Porphyroblastic albite schist, *Tottori*, 159

MIYAKE, H., Genesis of skarns, *Honshu*, 139

MIZUKUSA, S. v. HAYASHI, H., 109

MIZUNO, M. v. HAYASHI, H., 109

MIZUTANI, H. v. KANAMORI, H., 250

MIZUTANI, S., Transformation of silica, 107

MIZUTANI, Y. v. RAFTER, T. A., 117

MЛАВСКИЙ, А. Л. v. LA BELLE, H. E., Jr., 190

MNATSAKANYAN, A. KH., Accessory minerals in comagmatism, *Armenia*, 7

MOBUS, G., Orientation of mafic minerals, 229

MÖDRESKI, P. J., Thermoluminescent calcite, *New Jersey*, 338

MOGAROVSKIY, V. V., Wall-rock orthoclasitization, *Gissar range*, 198

— & MEL'NICHENKO, A. K., Scandium in granitoids, *Tadzhikistan*, 35

— TARNOVSKIY, G. N., & VASIL'YEV, E. K., Supergene hydrozincite, *Tadzhik SSR*, 312

MOGHARABI, A., Trace elements in carbonates, *Oklahoma*, 202

MOHAI, M. & UPOR, E., Determination of Nb, 171

MOINEBEAU, J., Alluvial strata, *Coirons plateau*, 93

MOISEYENKO, U. I., SOLOV'YEV, Z. A., & KUTOLIN, V. A., Thermal conductivity of granite, 336

MOKIEVSKIY, V. A. v. AFANAS'EV, I. I., 75 ; VoiTEKHOVSKIY, V. N., 75

MOKIYENKO, V. F., Celestite horizons, *Volgograd*, 117

MOLENGRAAFF, G. J. H., Chromium enrichment of transition zones, 295

MOLEVA, V. A. v. ZVYAGIN, B. B., 306

MOLOTOV, S. P. v. RuzHITSKY, V. O., 149

MONOD, T. & POMEROL, C., Lavas, *Mauritania*, 321

MONROE, E. A., Structure of gaulussite, *California*, 270

MONSEUR, G., Lead-zinc ores, *Spain*, 21

MONTEIRO, M. J., Clays, *Mozambique*, 175

MONTIGNY, R. J. E. v. JONES, L. M., 296

MONTORIOL-POUS, J. v. FONT-ALTABA, M., 22

MONToya, J., Heazlewoodite, *Vermont*, 79 ; Planchéite, *Arizona*, 79

MOOK, W. G. v. LERMAN, J. C., 164

MOORBATH, S., BELL, K., LEAKE, B. E., & McKERROW, W. S., Geochronology, *Ireland*, 261

— HURLEY, P. M., & FAIRBAIRN, H. W., Age of intrusive porphyries, *United States*, 113

— v. GALE, N. H., 255

MOORE, A., Dolerite dyke, *Transkei*, 235

MOORE, C. B., BIRREL, P. J., & LEWIS, C. F., Canyon Diablo meteorite, 124

— & LEWIS, C. F., Carbon in chondrites, 209

— v. BUSECK, P. R., 125 ; LINN, T. A., Jr., 301

MOORE, F. B. v. HAWLEY, C. C., 100

MOORE, J. G., NAKAMURA, K., & ALCARAZ, A., 1965 eruption, *Taal volcano*, 239

MOORE, P. B., Leucophoenicites, (I), 94

— Welinite, *Långban*, 127

— Gabrielsonite, *Långban*, 128

— Structure of joesmithite, *Långban*, 179

— Gageite, harstigite, *New Jersey* & *Sweden*, 221

— Structure of sapphirine, 267

— Sulphosalt structures, 270

— Basic Mn arsenates, (I), 271

— & SMITH, J. V., Wickmanite, *Långban*, 127

MOORE, S. L. v. JONES, W. R., 65

MOORE, W. J. v. STACEY, J. S., 168

MOORE, W. S., Uranium, thorium in rivers, *Mississippi & Amazon*, 297

MORANDI, N. v. CARAPEZZA, M., 195

MORANTE, N. v. ARRESE, F., 161

MOREAU, J. v. VIAENE, W., 191

MOREAU, P., Sedimentary rocks, *Angoulême*, 242

MOREL, P. v. ALEXANIAN, C., 58

MORGAN, B., Eclogite lenses, *Venezuela*, 249

MORGAN, G. v. FLEISCHER, R. L., 208

MORGAN, J. W. & LOVERING, J. F., Rhenium, osmium in chondrites, 123

MORGAN, W. R., Lavas, *New Guinea*, 64

— Computer programme for silicate formulae, 84

— Computer programmes for Niggli values, 258

MORGENSTEIN, M., Cementation of deep-sea sediments, *Pacific Ocean*, 244

MORGENSTERN, N. R. & TCHALENKO, J. S., Preferred orientation in clays, (I, II), 174

MORGENSTERN-BADARAU, I. v. DELAMOYE, P., 180

MORIMOTO, N. & KOTO, K., Umangite, 181

MORKOVINA, V. F. v. ASHIKHMINA, N. A., 7

MORLOT, G. v. PLENDL, J. N., 76

MOROZOV, V. I., Mercury in mud volcano deposits, *Kerch' peninsula*, 199

MORRE, N., Carboniferous volcanic rocks, *Lot*, 318

— & VUILLEMENOT, N., Spilitic lavas, *Sahara*, 148

MORRIS, A. v. LELEU, M., 98

MORRIS, B., JOHNSON, V., & WOLD, A., Cobalt disulphide, 27

MORRISSEY, D. J., Mineral specimens, (book), 262

MORSE, S. A., Dispersion method for plagioclase, 219

MORTIMER, C. v. CLARK, A. H., 2

MOSKALEVA, S. V., Zoning in upper mantle, 145

MOSKALEVA, V. N., Spectrographic analysis, 5

— v. DUBINSKIY, A. YA., 246

MOSKALYUK, A. A. v. ANDRUSENKO, A. A., 107 ; NIKANOROV, O. S., 6

MOTTANA, A., Bergamaskeite, 217

MOUL, N. v. HAWTIN, P., 190

MOUTERDE, R. v. BORDET, P., 82

MOVILEANU, A. v. SAVUL, M., 116, 243

MOVLYAV, V. A. v. DOROFEEV, V. A., 9

MOXHAM, R. M., FOOTE, R. S., & BUNKER, C. M., Hydrothermally altered rocks, *Arizona*, 98

MOZAFARI, C., Magnesiochromites, 223

— v. BEUGNIES, A., 312

MROSE, M. E. v. ERICKSEN, G. E., 131

MUAN, A., Ternary systems, 24

— Oxide solution systems, 24

— v. NAZIGER, R. H., 110 ; ROSÉN, E., 25, 28

MUCHI, M., Clay minerals in shales, *Kyushu*, 91

— Fibrous minerals, 91

MUELLER, G., Origin of meteorites, 42

MUELLER, R. F., Stability of silicates, 109

— Metamorphic amphiboles, 110

— Stability of pyroxenes, olivines, 110

— Quasi-binary crystals, 283

— v. OLSEN, E., 29

MUESSIG, S., Geology, *Washington*, 151

MUIRE, A. H. & WIEDERSICH, H., Delafossite, 15

— v. WIEDERSICH, H., 141

MUIRE, I. D. v. TILLEY, C. E., 58

MUKERJI, J., System $\text{CaO}-\text{CaF}_2-2\text{CaO}\cdot\text{SiO}_2$, 194

MUKHERJEE, A., Precambrian pumice, *Rajasthan*, 324

MUKHERJEE, B., Trace elements in rocks, *Singhbhum*, 112

MUKHERJEE, K., Modified melting law, 190

MUKHITDINOV, G. N. v. Es'KOVA, E. M., 130

MUKHLYA, K. A. v. SHCHERBA, G. N., 200

MÜLLER, G., Pseudomalachite, libethenite, *Saarland*, 77

— Sedimentary petrology, (I), 88

— Sediments, *Indian Ocean*, 293

— NIELSEN, H., & RICKE, W., Sulphur isotopes in connate waters, *Germany*, 297

MÜLLER, O. v. KRANKOWSKY, D., 123

MÜLLER, W. v. HOHMANN, H. H., 15

MUMBACH, N. R. v. FLANIGEN, E. M., 31

MUMME, I. A., Crustal thickness measurements, *South Australia*, 339

— Uranium in zircons, *Australia*, 303

MUMYATSKAYA, N. G. v. DUSMATOV, V. D., 226

MUN, A. I., BAZILEVICH, Z. A., & BUDYEYeva, K. P., Fluorine in sediments, 37

MUNK, M. N. v. HOHENBERG, C. M., 208

MUNN, R. W. v. BARRON, T. H. K., 250

MUNNS, R. G., STANLEY, R. J., & DENNISON, C. D., Brines, *Red Sea*, 118

MUNSON, E. L., Analysis by, 53

MURAI, T., Garnet amphibolite, *Japan*, 133

MURAKAMI, N., Ferroedenite, ferroricterite, *Japan*, 135

— & MARUYAMA, T., Ferropargasite, ferroedenite, *Japan*, 135

MURAV'eva, I. V. v. GENKIN, A. D., 225

MURDOCH, J. & GEISSMAN, T. A., Pendletonite, *California*, 131

MUREŞAN, M., Microstructures in crystalline schists, *Romania*, 158

MURRAY, B. C., Differential processes on lunar surface, 254

MURTHY, K. S. v. RAO, K. V. K., 250

MURTHY, M. V. N. v. DAS GUPTA, S. P., 19

MURTHY, S. R. N., Tin garnet, *Bihar*, 303

MURTHY, V. R. & STUEBER, A. M., K/Rb in mantle-derived rocks, 228

MUTCH, A., Magnetic spherules in salt, 301

MUTTI, E. v. STANLEY, D. J., 328

MÝL, J. v. KVAPIL, J., 104

NABARRO, F. R. N. v. LEVITT, C. M., 160

NABHOLZ, W. v. LOMBARD, A., 173

NACHSEL, G. v. KRÖLL, D., 328

NAERT, K., Metamorphism, *Antarctica*, 324

NAFZIGER, R. H. & MUAN, A., Olivines & pyroxenes, 110

NAGANNA, C. v. SOMASEKAR, B., 48

NAGASHIMA, K. & CHIBA, M., Yttrotitanites *Korea & Japan*, 132

— & KATO, A., Thalénite, *Japan*, 133

— & CHIBA, M., Pegmatite minerals, *Japan*, 142

— v. FUJIWARA, S., 132 ; SUGITANI, Y., 9

NAGATA, T. v. KONO, M., 162 ; OZIMA, M., 16

NAGORNÝ, A. I. v. GLAGOLEV, A. A., 8

NAGY, B., Carbonaceous meteorites, 308

NAIDU, P. R. J. & VISWANATHIAH, M. N., International Mineralogical Association 4th General Meeting, 7

NAIDU, S. V. N. v. RAO, K. V. K., 250

NAKAHIRA, M. & UDA, M., Defect structures in clay minerals, 266

NAKAJIMA, W. & KOIZUMI, M., Analcite, *Japan*, 138

NAKAMURA, K. v. MOORE, J. G., 239

NAKAMURA, T. v. IMAI, N., 308

NAKANO, H. v. SUGIURA, S., 91, 92

NAKATA, S. v. TONOSAKI, Y., 45

NAKAYAMA, H. v. SUGIURA, S., 92

NAKAYAMA, N. v. HAYASHI, H., 109

NALDRETT, A. J., CRAIG, J. R., & KULLERUP, G., System $\text{Fe}-\text{Ni}-\text{S}$, 285

NAMBU, M. & OKADA, K., Todorokite, *Aomori*, 56

— Lithiophorite, *Miyagi*, 58

— & TANIDA, K., Todorokite, 141

— & TANIDA, K., Hemimorphite, *Niigata*, 134

— & KITAMURA, T., Manganese silicate ores, *Japan*, (I), 132

— v. KANO, S., 284

NANDI, K., Garnets, *Darjeeling*, 45

NANKOWA, P. v. RUSTSCHKEV, D. D., 189

NÁRAY-SZABÓ, I. & PÉTER, É., Analysis of clay mineral phases, 176

— Nordstrandite, bayerite in brickclay, *Hungary*, 176

NAREBSKI, W., Amphibolites, *Spitsbergen*, 7

NARES, N., REBHUN, M., & SPERBER, H., Flocculation of clay suspensions, 262

NASSAU, K., Star corundum, 196

NATHAN, S. & SCHULTE, F. J., Volcanic activity, *Victoria Land*, 69

AUDIN, F. v. PLENDL, J. N., 76
 AUMOV, G. B., POLYAKOV, A. I., & SERGEYEV-BOBB, A. A., Thorium in micas, 218
 AUMOV, V. A., Differentiated trap intrusion, *Lower Tunguska*, 233
 — & GURIN, P. A., Hybridism in palagonite traps, 234
 AWI, O. v. HALPERIN, A., 251
 AYDIN, D. E., TEIS, R. V., & ZADOROZHNYY, I. K., Temperatures in Cretaceous, USSR, 206
 AZAROV, I. M. v. BOLTNEVA, L. I., 293
 BECHAYEV, I. A., Apatite-bearing rocks, *Baikal*, 321
 BECHELYUSTOV, G. N. & LEBEDEV, V. S., Bonchevite, *Kazakhstan*, 222
 BEDOMA, J., Lattice constants from powder diagrams, 265
 BEEV, D. v. GOLDSCHMIDT, M. J., 297
 NEFEDOV, E. I., Berborite, USSR, 128
 EGLLA, S. v. LONG, G., 295
 NEGRETTI, G. C., Granitoid formations, *Sardinia*, 231
 NEKRSOV, I. YA. v. BROVKIN, A. A., 128
 JELEN, J. v. MASON, B., 302
 NELSON, R. P., System α -Al₂O₃-Cr₂O₃, 25
 NELSON, W. H. & PIERCE, W. G., Trachy-andesite, *Wyoming*, 323
 NEMEC, D., Garnets from skarn rocks, *Moravia*, 216
 — Garnets from skarn rocks, *Erzgebirge*, 216
 — Fluorine in lamprophyric rocks, *Bohemia*, 293
 NEMECZ, E. & VARJU, G., Expanding clay minerals, *Carpathians*, 176
 — Flint-clay, *Hungary*, 176
 NEMETH, J. C., Manganese ores, *Hungary*, 279
 NEPEINA, L. A., Analysis by, 304
 NEPROCHNOV, YU. P., NEPROCHNOVA, A. F., ZVEREV, S. M., MIRONOVA, V. I., BOKUN, R. A., & CHEKUNOV, A. V., Crustal structure, *Black Sea*, 145
 NEPROCHNOV, A. F. v. NEPROCHNOV, YU. P., 145
 NERUCHEV, S. G. & AKAYEV, B. A., Bituminosity in carbonate rocks, *Dagestan*, 203
 — & KOVACHEVA, I. S., Environment of oil-bearing rocks, 164
 NESBITT, L. E., Geodes, *Colorado*, 78
 NESBITT, R. W., Determination of Mg, 5
 NESTERENKO, G. V. & AL'MUKHAMEDOV, A. I., Titanium in pyroxenes, 46
 — v. BALASHOV, YU. A., 35
 NESTEROFF, W. D. v. HEEZEN, B. C., 91
 NETTILLARD, A., Analyses by, 47, 48, 216
 NETTERBERG, F., Nomenclature of soil carbonates, 154
 NEUHAUS, A. & ABS-WURMBACH, H., Cosmochlore (ureyite), 305
 — v. RECKER, K., 313
 NEUZIL, J. v. BOROVEC, Z., 30
 NEVES, J. M. C. = CORREIA NEVES, J. M.
 NEWHEY, C. W. A. v. RADFORD, K. C., 250
 NEWNHAM, R. E., Pollucite, *New England*, 95
 NEWTON, R. C. & SMITH, J. V., Breakdown of albite, 288
 NICHPORUK, W., CHODOS, A., HELIN, E., & BROWN, H., Metals in stony meteorites, 123
 NICHOLAS, J., QUINTIN, M., & DOUILLET, P., X-ray fluorescence analysis, 172
 NICHOLAS, J. F. v. DRECHSLER, M., 249
 NICHOLLS, G. D., Trace elements in sediments, 201
 — GRAHAM, A. L., WILLIAMS, E., & WOOD, M., Solid-source spark mass spectrography, 87
 NICHOLLS, J. v. CARMICHAEL, I. S. E., 223
 NICHOLSON, R., Crenulated schists, 73
 NICKEL, E., KOCK, H., & NUNGÄSSER, W., High viscosity flow, 190
 NICKEL, E. H., Latrappite, *Quebec*, 127
 — v. BUTTERILL, J. D., 83
 NICKELSEN, R. P., Fossil distortion, *Pennsylvania*, 72
 NICOLAYSEN, L. O. v. BURGER, A. J., 167; ULRICH, T. J., 255
 NICOLETTI, M. v. BELLUOMINI, G., 106
 NICOLINI, P., Oolitic Fe ores, *Tunisia*, 278
 NIEBECK, H.-H., Tarbutite, 180
 NIEKERK, C. B. v. BURGER, A. J., Age of microphenocrysts, *South Africa*, 165
 NIELSEN, H., Sulphur isotopes in marine sediments, 38
 — v. MÜLLER, G., 297
 NIEUWENKAMP, W., Petrogenetic theory, 68
 NIGGEMAN, M. v. PFAFFL, F., 216
 NIGGLI, A., Si/Al in plagioclases, 15
 NIGGLI, C. R., Polymetamorphic rocks, *Aar*, 247
 NIGGLI, E. v. JÄGER, E., 165
 NIJHUIS, H. J. v. ROEVER, W. P. DE, 157
 NIKANOROV, A. S., MIKHAILOV, I. I., MOSKALYUK, A. A., & LAZAREVICH, N. S., Analysis of fluid inclusions, 6
 NIKISHOV, K. N. & NIKISHOVA, L. V., Olivine & monticellite, 230
 NIKISHOVA, L. V. v. NIKISHOV, K. N., 230
 NIKITIN, V. D. & RUNDKVIST, D. V., Evolution of mineralization, 229
 NIKITINA, E. I., BERZINA, A. P., KUZNETSOVA, I. K., & SOTNIKOV, V. I., Svanbergite, *Gorny Altai*, 58
 NIKITINA, I. B. v. BYKOVA, Y. L., 40
 NIKOLAYEV, D. S., LAZAREV, K. F., KORN, O. P., YAKUNIN, M. I., DROZHIN, V. M., & SAMARTSEVA, A. G., Uranium in waters & sediments, *Black Sea*, 296
 NIKOL'SKIY, I. L. & BUTURLINOV, N. V., Evolution, metallogeny, *Donets basin*, 183
 NIKONOV, V. F., Gas pools, 298
 NIKULINA, E. A. v. KHAN, B. KH., 8
 NILSEN, B., Separation of perthitic microcline, 258
 NISHIDA, K. v. KANEHIRA, K., 141
 NISHIDA, T. v. TAKANO, Y., 334
 NISHIMURA, T. v. SADANAGA, R., 96
 NISSEN, H.-U., EGGMANN, H., & LAVES, F., Schiller of labradorite, 51
 — v. RYBACH, L., 42
 NISSENBAUM, A., Anhydrite inclusions in quartz, *Israel*, 224
 NIXON, D. E. v. PARRY, G. S., 96
 NIXON, P. H. & CLARK, L., Volcanic rocks, *Uganda*, 64
 NOAKES, J. E., SUPERNAW, I. R., & AKERS, L. K., Thorium in sediments, *Mississippi*, 201
 NOBLE, D. C., Determination of optic angle, (II), 258
 — & SUKHESWALA, R. N., Fe-rich basalt, *Bombay*, 322
 NODA, T. v. SUWA, Y., 93
 NOE-NYGAARD, A., Titanite, alumina in basaltic lava, *Faeroës*, 316
 NOETZLIN, J. v. KRUMMENACHER, D., 255
 NOGUCHI, T. v. HAYASHI, H., 109
 NOLAN, J. v. EDGAR, A. D., 30
 NOLD, J. L. & ERICKSON, K. P., K-feldspar staining methods, 84
 NOLTIMER, H. C., Impregnation of weak sediments, 257
 NOONER, D. W. & ORÓ, J., Organic compounds in meteorites, (I), 125
 — v. ORÓ, J., 38
 NORDEMANN, D., TOBAILEM, J., & SCHIN-EIZER, M., Radioactivity of Granès meteorite, 123
 NORMAN, J. C. & HASKIN, L. A., Geochemistry of Sc, 111
 NORRIS, C. A. v. CLARK, C. D., 251
 NOUGIER, J. v. BELLAIR, P., 71
 NOVAK, F. I. v. PIKOVSKIY, YU. I., 295
 NOVÁK, J., Origin of cristobalite, montmorillonite, *Slovakia*, 245
 NOVIKOV, A. I., KRUCHININ, YU. D., YUDIN, I. A., & CHEPULIN, V. A., Hornblende in casting, 9
 NOVOKHATSKIY, I. A. v. RUSAKOV, L. N., 8
 NOVZHILOV, A. I. v. BALITSKIY, V. S., 138
 NOWACKI, W., Wallisite, *Lengenbach*, 126
 — v. BURRI, G., 126; MARUMO, F., 16, 270; WUENSCH, B. J., 270
 NOWOTNY, H. v. VÖLLENKLE, H., 267
 NUFFIELD, E. W. & HARRIS, D. C., Berryite, *Colorado & Sweden*, 225
 — v. HARRIS, D. C., 140
 NUNES, A. M. = MARTINS NUNES, A.
 NUNES, J. E. L. = LOPEZ NUNES, J. E.
 NUNGÄSSER, W. v. NICKEL, E., 190
 NYQUIST, L. E., HUNEKE, J. C., & SIGNER, P., Rare gases in meteorite, 301
 O'BEIRNE, W. R., Analysis by, 124
 OBERLIN, A. v. HEEZEN, B. C., 91; HUCHER, M., 118
 ODA, A. v. HAYATSU, R., 213
 O'DANIEL, H. v. ROTHBAUER, R., 269
 ODÉ, H., Mechanical properties of salt, 262
 — v. MATTOX, R. B., 261
 ODIKADZE, G. L., Potassium, rubidium, thallium in granitoids, *Georgian SSR*, 199
 OFTEDAHL, C., Stratigraphy of lavas, *Oslo*, 325
 OFTEDAL, I., Minor elements in garnets, *Norway*, 45
 — Lead in microcline, *Norway*, 50
 OGAWA, T., Varieties of heulandite, 310
 — v. UMEGAKI, Y., 338
 OGISO, S. v. HAYASHI, H., 109
 OGURA, Y. v. KURODA, Y., 136
 O'HARA, M. J., Ultrabasic rocks, 227
 — Garnetiferous ultrabasic rocks, 228
 — Origins of ultramafic nodules, 228
 — Mineral parageneses in ultrabasic rocks, 228
 — & MERCY, E. L. P., Garnet peridotite, eclogite, *Switzerland*, 318
 — & STEWART, F. H., Gabbros, *Aberdeenshire*, 60
 — & YODER, H. S., Jr., Formation of basic magmas, 30
 — v. GRIBBLE, C. D., 152; MERCY, E., 114
 OHMASA, M., Volcanic ash soils, 327
 OHRDORF, R., Lithium in sedimentary rocks, 202
 OINUMA, K. & KODAMA, H., Infrared absorption of clay minerals, *Japan*, 90
 — — & KOBAYASHI, K., Kaolin minerals, chlorite, 89
 — v. HAYASHI, H., 179; KOBAYASHI, K., 92
 OJANPERÄ, P., Analysis by, 305
 OKADA, K., HACHIYA, Y., & KATO, S., Manganiferous limonite, *Aomori*, 55
 — & TANIDA, K., Pyrolusite, todorokite, *Aomori*, 56
 — v. NAMBU, M., 56, 58, 141
 O'KEEFE, J. A., Tektite sculpturing, 126
 — v. MAJUNDAR, H. H., 44
 OKOROKOV, S. D., GOLYŃKO-VOL'FSON, S. L., SATALKINA, M. A., & YAKINA, T. N., Heating of cement, 8
 OLEYNIKOV, B. V., Infiltrational metasomatism, *Gorbiachin river*, 230

OL'GINSKI, A. G. *v.* SOFRONOV, V. S., 8
 OLSEN, E., Roedderite in octahedrite, 124
 — & MUELLER, R. F., Stability of orthopyroxenes, 29
 — *v.* FUCHS, L. H., 227
 OLSON, H. J., Oxidation of sulphide body, *Arizona*, 21
 OLSON, J. C., HEDLUND, D. C., & HANSEN, W. R., Tertiary volcanism, *Colorado*, 323
 OLSON, R. J., ORÓ, J., & ZLATKIS, A., Organic compounds in meteorites, (II), 213
 OLSZAK, G., Geophysical studies of magmas, tectonics, 229
 OMARA, S., Phosphate deposits, *Syria & Egypt*, 188
 OMORI, K., Infrared absorption of quartz, orthoclase, oligoclase, 336
 O'NEIL, J. R. & TAYLOR, H. P., *Jr.*, Exchange reactions of feldspars, 110
 ONORATO, E. & SGARLATA, F., K-feldspars, 15
 ONUKI, H., Hornblendes, *Kitakami mts.*, 135
 — Calculation of hornblende formulae, 135
 — *v.* ASHIDA, S., 132
 ONUMA, N. *v.* HAMAGUCHI, H., 259
 OOSTHUIZEN, C. O. *v.* AHRENS, L. H., 117
 OOSTHUYZEN, E. J. & BURGER, A. L., Age of intrusives, *South Africa*, 165
 OPDYKE, N. D. & HEKINIAN, R., Magnetism of igneous rocks, *Atlantic Ocean*, 230
 — *v.* GLASS, B., 339
 ORAVECZ, J. *v.* SZÁDECZKY-KARDOSS, E., 333
 ORCEL, J., Evolution of classification systems, 316
 — Meteorite research, 298
 — & ALPERN, B., Orgueil meteorite, 300
 O'REILLY, W. *v.* BANERJEE, S. K., 76
 ORLACI, M. *v.* TOLLOON, F., 278
 ORLOV, YU. L. *v.* VINogradov, A. P., 201
 ORLOVA, G. B. *v.* SHARAFIYEV, M. SH., 8
 ORLOVA, L. P. *v.* AKHMANOVA, M. V., 16
 ORNSTEIN, M. A. M. & HAUG, G. M. W., Itabirite, *Surinam*, 279
 ORÓ, J. & NOONER, D. W., Alkanes in rocks, *Transvaal*, 38
 — *v.* NOONER, D. W., 125; OLSEN, R. J., 213
 OROVEANU, F. *v.* PETRULIAN, N., 186
 ORBEN, M. J. *v.* LEISECANG, E. C., 41
 ORSA, V. I., ELISEEVA, G. D., & KAZANTSEVA, A. I., Rare-earths in accessory minerals, *Dnepr*, 198
 ORTELEPP, R. J., Nsutite, *Transvaal*, 223
 ORVILLE, P. M., Albite solid solutions, 219
 OSBORN, E. F. *v.* SPEIDEL, D. H., 109
 OSHIMA, T., Ores, *Yanahava mine*, 97
 OSUKA, D. G. *v.* ALIYEV, A. G., 205
 OSIPOV, B. S. *v.* RAFAL'SKIY, R. P., 190
 OSMONBETOV, K. O. *v.* MITROFANOV, E. A., 272
 OSSENKOPF, W. *v.* RÖSLER, H. J., 154
 OSTAPENKO, G. T., Dehydration of gypsum, 26
 OSTENSO, N. A. *v.* VOGT, P. R., 253
 ÖSTERGAARD, T. V., Continuous density separator, 169
 OSTROVSKY, I. A., System $\text{SiO}_2\text{-H}_2\text{O}$, 28
 — Phase diagram of silica, 28
 OTHROSHCHENKO, V. D., ZENIN, M. F., & ZARETSKAYA, A. V., Boron in rocks, *Tien-Shan*, 39
 OTSU, H., X-ray diffraction by oriented powders, 84
 OTSUKA, R. *v.* IMAI, N., 91, 308
 OTSUKI, A. & HANYA, T., Precursors of humic acid, *Haruma*, 37
 OTTEMANN, J., Rutile-like mineral, *New South Wales*, 54
 — & TUFAR, W., Fungus spores replaced by apatite, *Holstein*, 337
 — *v.* EL GORESY, A., 126; FRENZEL, G., 274; PANAGOS, A., 311
 OTTING, W. & ZÄHRINGER, J., Carbon & rare gases in chondrites, 212
 OTTO, J., Geological excursion, *SW Germany*, 337
 OVCHINNIKOVA, L. I. *v.* FLOROVSKAYA, N. V., 220
 OVERSTREET, W. C., Distribution of monazite, 97
 OXBURGH, E. R. & TURCOTTE, D. L., Mantle convection, 339
 OXLEY, S. S. *v.* GORDON, G. E., 198
 OYA, I. *v.* SUGIURA, S., 92
 OYANG, CHI-YUAN & TONG, WU, Meteorites, *China*, 125
 OZIMA, M., KONO, M., KANEOKA, I., KINOSHITA, H., KOBAYASHI, K., NAGATA, T., LARSON, E. E., & STRANGWAY, D., Palaeomagnetism of lavas, *New Mexico*, 168
 ÖZTUNALI, Ö., Uranium ores, *Anatolia*, 273
 PACE, F., Rock complexes, *Viola valley*, 248
 PAECH, H.-J., Granite, *Vogtland*, 232
 PAESLACK, J. *v.* BERGERHOFF, G., 266
 PAGE, N. J., Serpentine polymorphs, 308
 PAGGI, A. *v.* BARZON, G. P., 11
 PAGLIONI, G. P. = PEYRONEL PAGLIONI, G.
 PAILLERET, P. *v.* FREUNDLICH, W., 191
 PAITHANKAR, M. G., Volcanism, *Argyllshire*, 147
 PAKHOMOV, S. I. *v.* KISSIN, I. G., 195
 PÄLCHEN, W. *v.* RÖSLER, H. J., 154
 PALIVCOVÁ, M. & ŠTOVÍČKOVÁ, N., Segmented structure of massif, *Bohemia*, 332
 PALMER, D. F., Serpentinite & contact rock, *Collins river*, 65
 PALMER, P. D. *v.* HEIER, K. S., 50
 PAMEL'IOVA, L. A. *v.* MELEN'TYEV, B. N., 291
 PAMNANI, K. & AGNIHOTRI, S. K., Determination of Fe, 85
 PAMPURA, V. D., Wallrock metamorphism of granitoids, 199
 — *v.* KARPOV, I. K., 110
 PANAGOS, A. & OTTEMANN, J., Nodular chromite, *Greece*, 311
 PANAYOTOV, G., Analysis by, 48
 PANDE, I. C. & VERMA, P. K., Klementite, *Uttar Pradesh*, 137
 PANDYA, J. R. & SARAF, C. L., Etching of baryte, 160
 PANDYA, M. K., Amphibolites, *Rajasthan*, 333
 PANIN, N., Origin of molasse, *Carpathians*, 243
 PANKINA, R. G., MEKHTIYEVA, V. L., GRINENKO, V. A., & CHURMANTEYEVA, M. N., Sulphur isotopes in waters, *Caucasus*, 41
 PANOV, B. S. & KON'KOV, G. G., Lead isotopes in galena, *Azov*, 33
 — *v.* BUTURLINOV, N. V., 115
 PANT, A. K. & CRUCKSHANK, D. W. J., Structure of datolite, 267
 PANTÓ, G., Consolidation of magmatic products, 315
 — Plutonic & volcanic rocks, 316
 — Tertiary volcanism, *Hungary*, 325
 — KOVÁCH, A., BALOGH, K., & SÁMONI, Z., Age of metamorphic rocks, *Hungary*, 256
 PANTÓ, G. *v.* SZÁDECZKY-KARDOSS, E., 319, 333
 PANOU, G. *v.* DOYEN, L., 259
 PAPIKE, J. J. *v.* BURNHAM, C. W., 267
 PAPUNEN, H., Barytes, *Finland*, 143
 PAQUET, H. *v.* MILLOT, G., 12
 PARHAM, W. E. *v.* HOSKING, J. S., 175; WHITE, W. A., 175
 PARK, F. B., Formation of Fe ores, *Ontario*, 99
 PARKER, R. L., Composition of Earth crust, 32
 — *v.* BURRI, C., 172
 PARKHOMENKO, M. A. & LUGOVSKAYA, E. S., New synthetic micas, 8
 PARKIN, D. W., DELANY, A. C., & DELAN AUDREY C., Airborne cosmic dust, *Barbados*, 42
 — *v.* BHANDARI, N., 302
 PARKS, G. A. & TIEH, T. T., Artefact obsidian, *California*, 42
 PARKS, J. M., Cluster analysis, 79
 PARRY, G. S. & NIXON, D. E., Potassium graphite, 96
 PARRY, L. G. & WESTCOTT, M. F., Curie point in ilmenites, 252
 PARSONS, I., Feldspathic syenites, *Assyria*, 147
 — Homogeneity in alkali feldspars, 219
 PARWEL, A. *v.* SUNDIUS, N., 100, 143
 PASCAL, B. *v.* DONATI, J.-R., 169
 PASCUAL, J. A. = ALONSO PASCUAL, J.
 PASSAGLIA, E. *v.* ALIETTI, A., 139; SCAINI, G., 58
 PASTANT, R., Synthetic smithite, miargyrite, 107
 — Oregonite, 285
 PASTELS, P. *v.* DEUTSCH, S., 81; MICHTON, J., 166; PICCIOTTO, E., 1
 PATEL, A. R. & DESAI, C. C., Etching of irradiated fluorite, 335
 — & PATEL, S. M., Etching of calcium fluoride, 335
 — & RAJU, K. S., Selenite cleavages, 333
 — & RAMACHANDRAN, N., Growth hillocks on diamond, 190
 — VAGH, A. S., & BAHL, O. P., NaCl whiskers, 28
 — — Etch patterns on NaCl, 335
 PATEL, S. M. *v.* PATEL, A. R., 335
 PATROVSKÝ, V., Determination of V, 171
 PATRULIUS, D. *v.* CIOFLICA, G., 319
 PATTISON, E. F. *v.* PHILPOTTS, A. R., 138
 PATTORET, A. *v.* DROWART, J., 24
 PAULA SANTOS, J. *v.* AIRES-BARROS, L., 152
 PAULITSCH, P., Analysis of aggregates, 169
 — Optical undulation in quartz, 251
 — & AMBS, H., Carbonatites, *Germany & Norway*, 62
 PAVELESCU, L. & PAVELESCU, M., Geology, petrography, *Oasa-Urdene*, 248
 PAVELESCU, M. *v.* PAVELESCU, L., 248
 PAVLOV, N. V. & CHUPRYNINA, I. I., Chromite spinellids, *Kempirsay*, 223
 PAVLOV, V. A. *v.* SERDYUCHENKO, D. P., 129
 PAVLOV, YU. I. *v.* ARAKELYAN, O. I., 8
 PAVLOVA, I. G., Formation of phenakite, 134
 — BEKNAZAROV, K. B., & SAL'DAU, E. P., Helvite in greisens, 53
 PAVLOVA, M., Analysis by, 144
 PAVLOVA, T. G., Granite formation, *Kazakhstan*, 152
 PAVLOVIĆ, S. *v.* KRSTANOVIC, I., 49
 PAWLOWSKA, J., Vein rocks in leucogranites, *Izera mts.*, 232
 PAYNE, G. H., Platy stilpnomelane, *Wittenoom Gorge*, 49
 PEACH, P. A. & RENAULT, J. R., Molybdenite, *British Columbia*, 97
 PEACOCK, J. D., BERRIDGE, N. G., HARRIS, A. L., & MAY, F., Geology, *Elgin Scotland*, 317
 PEACOR, D. R., Nigerite, *Egbe*, 15
 — FOIT, F. F., 195; FREED, R. L., 14
 PECK, D. L. *v.* WRIGHT, T. L., 327
 PECSI-DONATH, E. & SHIMO, B., Thermal decomposition of zeolites, 221

EDRO, G. & BERRIER, J., Transformation of kaolinite by washing, 263
 v. ROBERT, M., 289

EKÁREK, L. v. ČERNÝ, M., 104

ELC, Z. v. CHÁB, J., 332

ENÁ, J. M. G. = GONZALEZ PEÑA, J. M. ENG, TZE-CHUNG & CHANG, CHIEN-HUNG, Barytolamprophyllite, *Lovozero*, 129

ENTCHEVA, E. N., Alkaline elements in waters, 119

- Nitrogenous thermal waters, *Bulgaria*, 119

ÉRAMI, R., Fissure formation, 104

ERCHUK, L. L., Equilibria in amphibole-garnet rocks, 330

- Nepheline-feldspar crystallization, 283

- & GLAGOLEVA, M. A., Analysis of mineral mixtures, 4

- & RYABCHIKOV, I. D., System nepheline-alkali feldspar-plagioclase, 283

- & ZYRYANOV, V. N., Astrophyllites, *USSR*, 139

- v. MARAKUSHEV, A. A., 39

ERCIVAL, F. G., Textures in Fe formation, *Western Australia*, 279

PEREL'MAN, A. I., Geochemistry of epi-genesis, (book), 7

PEREZ-RODRIGUEZ, J. L. & MARTIN MARTINEZ, E., Clays in soils, *Andalusia*, 93

PERING, K. L. v. PONNAMPERUMA, C., 38

PEŘINOVÁ, M. & URUSOVSKAJA, A. A., X-ray hardening of NaCl, 249

PERIO, P. v. BELBECCHI, B., 16

PERMINGEAT, F. v. CAYE, R., 57

PERMYAKOV, A. P., Preparing magnesite for firing, 23

PERROTTA, A. J., Epistilbite, *Iceland*, 95

PERRY, D. v. BABCOCK, R. S., 84

PERRY, K., Jr., Use of algebra in petrology, (I), 79

PERSEL, É.-A., Todorokite, *Ariège*, 312

PERSSON, C., Age of peat-bogs, *Sweden*, 83

- Volcanic ash layers, *Iceland*, 153

PESELNICK, L., MEISTER, R., & WILSON, W. H., Elastic moduli of fused quartz, 76

PESHCHEVITSKII, B. I., ANOSHIN, G. N., & ERENBURG, A. M., Gold in sea-water, 118

PETCH, H. E., Star sapphire, *Ontario*, 196

PÉTER, É. v. NARAY-SZABÓ, I., 176

PETERMAN, Z. E., HEDGE, C. E., & BRADDOCK, W. A., Precambrian events, *Colorado*, 168

- COLEMAN, R. G., & SNAVELY, P. D., Strontium in greywackes, *Oregon* & *California*, 238

PETERS, J. M., Double uranium oxides, 191

PETERSEN, L., RASMUSSEN, K., & JENSEN, A. T., Soil problems following lignite mining, 93

PETERSEN, U., Geology, ores, *Peru*, 17

- Saturation diagrams, 275

PETERSIL'YE, I. Á., ANDREYEEVA, E. D., & SVESHNIKOVA, E. V., Gases, bitumens in plutonic rocks, *Siberia*, 298

- v. GORSTKA, V. N., 119

PETEY, J. v. BUFFETTE, J.-M., 321

PETRASCHECK, W. E., Metallogenic provinces, 17

- Zn-enriched zones, 21

- Bauxitic Fe ores, *Turkey*, 281

PETROPAVLOVSKAYA, I. B., Analysis by, 144

PETROV, B. V. v. BRANDT, S. B., 167

PETROV, L. L. v. MANUJOLOVA, M. M., 50

PETROV, T. G. v. GLIKIN, A. E., 106

PETROVA, L., Aggregates in granite, *USSR*, 80

PETROVA, M. G. v. EL'IANOV, A. A., 234

PETROVA, N. G. v. KRAYNOV, S. R., 40, 205

PETROVA, N. V. v. APLONOV, V. S., 143

PETROVA, V. P. v. ABAKUMOVA, K. M., 91

PETROVA, Z. I. v. KOSTETSKAYA, Y. V., 49

PETROVIĆ, B. v. DIMITRIJEVIĆ, M., 333

PETRULIAN, N. & STECLACI, L., Re/Mo in molybdenites, *Romania*, 57

- Re in molybdenite, *Romania*, 222

- SANDU, D., & OROVEANU, F., Copper mineralization, *Deva*, 186

PETRUSENKO, S. v. ARNAUDOV, V., 144

PEVEAR, D. R., Phosphorite formation, *United States*, 23

- Shallow water phosphorites, 281

PEYRONEL PAGLIONI, G. & BORRIANI, A., Regional metamorphism, *Val d'Ossola-Verbania*, 248

PEYRONET, P. de, Bauxite, *Turkey*, 281

PEFFERL, F. & NIGGENMAN, M., Tourmalines from pegmatites, *Bavaria*, 216

PEFFERKORN, W., Quartz globules in baryte, *Portugal*, 220

PHAN, KIEU DUONG v. CHAUVEL, J.-J., 313

PHEMISTER, J. v. EDWARDS, W. N., 147; KOSTOV, I., 261

PHILLIPS, E. L., Jr., Adamellite pluton, *North Carolina*, 159

PHILLIPS, R. & ROWBOTHAM, G., Synthetic alkali amphiboles, 288

- & WARE, N. G., Reflectivity of Ca monoferrite, 76

PHILLIPS, R. H. v. HAWTIN, P., 190

PHILLIPS, R. L. v. CLIFTON, H. E., 84

PHILLIPS, W. J., Crystallization of teschenite, *Ayrshire*, 236

PHILPOTTS, A. R., Fe-Ti oxide & apatite rocks, 284

- PATTISON, E. F., & FOX, J. S., Kalsilite, diopsite, melilite in xenolith, *Quebec*, 138

PHILPOTTS, J. A. & SCHNETZLER, C. C., Europium in rocks, 292

- & THOMAS, H. H., Rare-earths in anorthosite, mangerite, 35

- v. SCHNETZLER, C. C., 214

PIBOULE, M. & VACHETTE, M., Birefringence dispersion of plagioclases, 167

PICCIOTTO, E., Geology, *Sör Rondane mts.*, 67

- Ice crystals, 80

- DEUTSCH, S., & PASTEELS, P., Ages of rocks, minerals, *Antarctica*, 1

PICH, J. v. PŁOCHNIEWSKI, Z., 41

PICHLER, H., Volcanism, *Aeolian is.*, 325

- v. ZEIL, W., 325

PICOT, P. v. CAYE, R., 57; MARION, C., 196

PIERCE, R. S. v. JOHNSON, N. M., 174

PIERCE, W. G. v. NELSON, W. H., 323

PIERROT, M. v. BAUMER, A., 26

PIERROT, R. v. CAYE, R., 57; LAURENT, Y., 162

PIKOVSKIY, YU. I., BASHKIROV, A. N., & NOVAK, F. I., Catalysis by sedimentary rocks, 295

PILAR, L., Uranium mineralization, *Niza*, 101

- Contact metamorphic aureole, *Niza*, 156

PILKEY, O. H. & LUTERNAUER, J. L., Phosphate deposit, *North Carolina*, 23

PILLER, H., Colour coefficients of reflection, 258

PILOT, J., Geochemistry of S isotopes, 290

PINSON, H. W., Jr. v. HURLEY, P. M., 292

PIOTROWSKI, J. M. v. EDGAR, A. D., 29

PIPPING, F., Laumontites, 53

PIRBUDAGOV, V. M. v. ALIYEV, A. G., 116

PIRKLE, E. C., YOHO, W. H., & WEBB, S. D., Quartz sand, *Florida*, 155

PIRYUTKO, M. M. & GOLUBEVA, L. G., Determination of P, 86

PIŠA, M., Lead-zinc ores, *Příbram*, 184

PISSART, A. v. EK, C., 107

PISTORIUS, C. W. F. T., Lithium salts, 26

- v. RAPORT, E., 192

PITCHER, W. S. & SPENCER, M. O., Bibliography of geology, *Donegal*, 337

PITULEA, G. v. IANOVICI, V., 102, 230

PIVNIK, L. YA. v. KAIBICHEVA, M. N., 8

PIWINSKII, A. J., Hydrothermal equilibria, 288

PLAJNER, O., Epitaxial Ge, Si, 104

PLAKSENKO, N. A. & KOVAL', I. K., Trace elements in Fe formation, *Kursk*, 294

PLAMENEVSKAYA, N. L., Rubidium, potassium in rocks, *Kazakhstan*, 7

PLAS, L. VAN DER v. BARTHOLOMÉ, P., 268; CROMMELIN, R. D., 303

PLATONOV, A. N. v. GEVORK'YAN, S. V., 311

PLAVSHUDIN, V. G., GUSEV, V. V., & SHVETS, V. V., Manganapatite, *USSR*, 313

PLENDL, J. N., MANSUR, L. C., HADNI, A., BREHAT, F., HENRY, P., MORLOT, G., NAUDIN, F., & STRIMER, P., Spectra of silica polymorphs, 76

PLIETH, K. & SÄNGER, G., Structure of straskite, 271

PŁOCHNIEWSKI, Z., Iron, manganese in underground waters, *Poland*, 41

- & PICH, J., Iron, manganese in underground waters, 41

PŁOSHKOV, V. V. & DUDÝKINA, A. S., Micro-elements in rocks, *Caucasus*, 7

- & KNYAZEVA, D. N., Rare-earths, Y, Th in rocks, *Caucasus*, 7

PLUNKETT, E. L. Jr. v. RAMSPOTT, L. D., 48

PODEBIMSKAYA, E. A. v. BELOV, N. V., 94

POBEGUIN, T. v. CAILLÈRE, S., 23, 141, 175

PODOSEK, F. v. FUNK, H., 213

PODPORINA, E. K. v. BURKOV, V. V., 201

PÓKA, T. v. SZADECKZY-KARDOSS, E., 319

POKORNÝ, J., Rock joint minerals, *Bohemia*, (I), 77

- v. KUTINA, J., 271

POKROVSKIY, P. V., TORMOSOVA, G. F., & KOLENKO, L. I., Weinschenkite, *Urals*, 144

POLGE, B., Geochemistry of ores, *Deux Sèvres*, 21

POLKANOV, A. A. v. SARKAR, S. N., 82

POLKANOV, YU. A., Sillimanite, *Dnieper*, 133

POLLOCK, J. B., Determination of Nb & Ta, 171

POLUBOVARINOV, D. N. & KROLL', E. B., Mullite ceramics, 8

POLYAKOV, A. I. & KOROBKOV, V. I., Quantitative microautoradiography, 6

- v. GERASIMOVSKY, V. I., 6; KOGARKO, L. N., 239; NAUMOV, G. B., 218

POLYAKOVA, O. P. v. TOMSON, I. N., 33

POLYKOVSKIY, V. S. v. ELINSON, M. M., 205

POMEROL, C., Palaeopodzol section, *Paris basin*, 13

- Clay minerals, *Paris basin*, 264

- & RIVELINE-BAUER, J., Kaolinitic-ferruginous clays, *Beaune*, 92

- v. MONOD, T., 321

PONAHLO, J. F. R., Black star pyroxene, 197

PONCELET, G. M. & BRINDLEY, G. W., Low-temperature formation of kaolinite, 90

PONCET, J., Biotite in sandstone, *Grand May*, 218

PONNAMPERUMA, C. & PERING, K. L., Hydrocarbons in asphalt, *Trinidad lake*, 38

PONOMAREVA, L. G. v. DOBRETSOV, N. L., 158

PONOMAREVA, N. M., Reflectance of ore minerals, 251

POOLE, F. G. v. SHAWE, D. R., 23

POPLAVKO, E. M., Rhenium in sulphide ores, *Dzhezkazgan*, 187

POPOLOVIT, E. I. v. KOVALENKO, V. I., 239, 326

POPOV, V. A. v. CHESNOKOV, B. V., 158

POPOVA, G. B., ERSHOV, V. V., & KUZNETSOV, V. A., Pentlandite, 106

PORATH, H., Age of hematite ores, *Australia*, 166

POROTSOVA, G. A. *v.* BURTSEVA, Z. A., 150
 PORRENDA, D. H., Glauconite & chamosite as depth indicators, 241
 POSADAS, V. G. & KALLIOKOSKI, J., Age of granite intrusive, *Venezuela*, 255
 POST, B. v. GREENBLATT, M., 271
 POTAP'YEV, V. V. *v.* ANOSHIN, G. N., 35
 POTENZA, R. *v.* CAMPIGLIO, C., 239
 POTY, B., Lamellar quartz, *France*, 309
 POUT, G., Manganese ores, *Morocco*, 279
 POULIEFF, C. N. *v.* KIROV, G. N., 310
 POVARENYYKH, A. S., Mineral classification, (book), 7
 — Bonding forces in mineral structures, 265
 — *v.* GEVORK'YAN, S. V., 311 ; LITWIN, A. L., 267
 POVONDRA, P. & SLÁNSKÝ, E., Gorceite, *Bohemia*, 78
 — *v.* ČERNÝ, P., 52
 POWARENYYKH, A. S. = POVARENYYKH, A. S.
 POWELL, D. & TREAGUS, J. E., Inclusion trails in porphyroblasts, 67
 POWELL, J. L., Strontium in carbonatites, kimberlites, 36
 POZDNEV, YU. D., Plasticity of bentonite clays, 10
 PRAKASH, A. *v.* KAMB, B., 180
 PRAKHOVA, E. V., Globular pyrite, *Urals*, 20
 PRASAD, A. K., Skarn rocks, *Czechoslovakia*, 132
 PRASAD, J., D.t.a. of kaolinite, 90
 PRASHNOWSKY, A. A. & BURGER, K., Carbohydrates, amino acids in coal beds, *Ruhr*, 295
 — & SCHIDLOWSKI, M., Precambrian thucholite, *Witwatersrand*, 203
 PREGERMAIN, S. *v.* ALPERN, B., 240
 PREISINGER, A., Prehnite, *Harzburg*, 14
 — *v.* ARMING, H., 260 ; PREWITT, C. T., 267
 PRENTICE, J. E., Brick clays, 11
 PRESLEY, B. J. v. BROOKS, R. R., 204
 PRESTON, J., Dendritic pyroxene, *Donegal*, 47
 PREUSS, E. & ZIEHR, M., Mercury in baryte, sphalerite, *Bavaria*, 33
 PREWITT, C. T., Structure of pectolite, 268
 — KIRCHNER, E., & PREISINGER, A., Structure of larsenite, *New Jersey*, 267
 — *v.* BURNHAM, C. W., 267
 PRICE, N. B., Mn-Fe nodules from different depths, 203
 — *v.* ANGELL, G. R., 259 ; COX, K. G., 6 ; HALLAM, A., 202
 PRICE, P. B., RAJAN, R. S., & TĀMHANE, A. S., Erosion of meteorite, 211
 — *v.* FLEISCHER, R. L., 124, 208, 261
 PRIEM, H. N. A., BOELRIJK, N. A. I. M., & BOERBOOM, A. J. H., Lead isotopes in galena, *Netherlands*, 256
 PRINZ, W. C., Manganese ores, *Montana*, 18
 PRIPACHKIN, V. A. *v.* GORSTKA, V. N., 119
 PROCTOR, P. D. *v.* KISVARANSYI, G., 291
 PROKHOVOROV, V. G. *v.* VOYTKEVICH, G. V., 161
 PROKOF'YEV, L. M. *v.* LEBEDEV, V. I., 33
 PROKOF'YEV, V. V. *v.* BOZHENOV, P. I., 8
 PROSKURKO, A. I., Basaltic rocks, *Turkmenia*, 149
 PROTAS, J. *v.* GRANGER, M.-M., 95, 270
 PUCHELT, H. v. BUSCHENDORF, F., 34
 PUCHKOV, E. V., Thermofluorescence of quartzites, 336
 PUFF, P. & SEIDEL, G., Sandstone, *Thuringia*, 243
 PUGH, D. T., Hot brines, *Red Sea*, 118
 PUGIN, V. A. *v.* KHITAROV, N. I., 10
 PULLAR, W. A., Volcanic ash beds, *New Zealand*, 327
 PURKAIT, P. K. *v.* ROY, S., 20
 PUSCH, R., Dispersion of clay suspensions, 91
 PUSHKAR, P., Strontium isotopes in volcanic rocks, 292
 PUYO, M. & THIEL, R., Determination of trace elements, 171
 — *v.* HETMAN, J. S., 5
 P'YANZINA, L. YA. *v.* KHALILOV, A. D., 182, 268
 PYATENKO, YU. A. *v.* VORONKOV, A. A., 16
 PYATIKOP, P. D. & SHAPovalov, V. S., Minerals in smelting dust, 8
 PYTOWICZ, R. M., DISTECHE, A., & DISTECHE, S., CaCO_3 solubility in sea-water, 193
 QIAN, ZI-QIANG, CHEN, SHU-ZHEN, MA, SHIH-NIAN, & LIU, XUN-JIAN, Hydrochlorite, *China*, 128
 QUAGLIARELLA, F. v. DELL'ANNA, L., 16
 QUARATESI D'ACIARDI, L. = D'ACIARDI, L. Q.
 QUERVAIN, F. DE, Uranium minerals in pegmatite, *Andermatt*, 185
 — *v.* HÜGI, T., 185
 QUINTIN, M. *v.* NICHOLAS, J., 172
 QUIRK, J. P. *v.* CHUTE, J. H., 10
 QUON, S. H. & HEINRICH, E. W., Minor elements in carbonatites, 36
 QURESHI, A. A. *v.* BHATTY, M. I., 103
 RAADE, G., Altered mosandrite, *Langesundsfjord*, 53
 RABBI, E., Determination of Al, 170
 RABINOVICH, A. V. *v.* BADALOV, S. T., 199
 RABITZ, A. & WOLF, M., Asphalt in shales, *Westphalia*, 203
 RADCHENKO, N. S. *v.* Kos'ko, M. K., 233
 RADCLIFFE, D., Accuracy of X-ray analysis, 86
 RADCZEWSKI, O. E., Raw materials for ceramics, 173
 RADELLI, L., Metallogenetic belts, *Andes*, 271
 RADFORD, K. C. & NEWHEY, C. W. A., Deformation of Mg-Al-spinel, 250
 RADHAKRISHNA, B. P., Bauxite, *Mysore*, 22
 RADKEVICH, R. O., Dendritic-skeleton crystallization of ores, *Caucasus*, 334
 RADTKE, A. S., TAYLOR, C. M., & HEWETT, D. F., Silver minerals, *Nevada*, 126
 — *v.* TAYLOR, C. M., 55
 RĂDULESCU, D. & BORCOS, M., Volcanic rocks, *Romania*, 319
 RĂDULESCU, D. P. *v.* IANOVICI, V., 271
 RAFAL'SKY, R. P. & OSIPOV, B. S., Systems containing U & sulphides, 190
 RAFFAELLI, P. *v.* TAJDER, M., 158, 232
 RAFIYENKO, N. I. *v.* GURULEV, S. A., 217
 RAFFTER, T. A. & MIZUTANI, Y., Isotopes in sulphates, 117
 — *v.* STANTON, R. L., 291
 RAGAN, D. M., Dunite, *Washington*, 228
 RAGUIN, E., Classification of granites, 315
 RAHDEN, H. V. *v.* SCHWEIGART, H., 70
 RAJAN, R. S. *v.* LAL, D., 120 ; PRICE, P. B., 211
 RAJANDI, B. *v.* SUNDIUS, N., 100, 143
 RAJU, G. J. V. J. *v.* SASTRY, A. R., 103
 RAJU, K. S. *v.* PATEL, A. R., 335
 RAKCHEYEV, A. D. & RUMYANTSEV, G. S., Magnetite-jacobsite series, 311
 — *v.* SVESHNIKOVA, O. L., 310
 RALEIGH, C. B., Deformation of ultramafic rocks, 228
 — & TALBOT, J. L., Deformed diopside, 24
 RAMACHANDRAN, N. *v.* PATEL, A. R., 190
 RAMACHANDRAN, V. S., KACKER, K. P., & HANNA, K. N., Identification of clay minerals, 9
 RAMAMURTHY, L., Elastic constants of corundum, 75
 — & REDDY, P. J., Elastic compliances of calcite, 249
 RAMBERG, H., Structural models, *Scandinavia*, 230
 RAMBERG, I. B., Geology, petrography *Helgeland*, 316
 RAMDOHR, P., Chromite in meteorites, (I) 210
 — Fusion crust of meteorites, 301
 RAMPNOUX, J.-P., Granodioritic intrusion, *Serbia*, 232
 RAMSPOTT, L. D. & PLUNKETT, E. L., *J.* Biotite, *Georgia*, 48
 RANADE, M. S. *v.* SATHE, R. V., 306
 RANDLE, K. *v.* GORDON, G. E., 198
 RANKAMA, K., Units of geological time, 167
 RAO, A. N. V. *v.* SASTRY, A. V. R., 140
 RAO, C. V. *v.* SASTRY, A. R., 103
 RAO, G. V., Kodurite, 279
 RAO, G. V. U. *v.* RAO, N. K., 134
 RAO, J. S. R. K. & RAO, V. M., Graphite, *India*, 281
 RAO, K. V. K., NAIDU, S. V. N., & MURTHY, K. S., Thermal expansion of calcite, 250
 RAO, M. N., Rare-earths in U minerals, 198
 — Osmium in meteorites, 212
 — *v.* CLARK, R. S., 208 ; MEASON, J. L., 300
 RAO, N. K. & RAO, G. V. U., Pegmatitic beryls, *India*, 134
 RAO, P. R. *v.* BHOLA, K. L., 136
 RAO, V. M. *v.* RAO, J. S. R. K., 281
 RAOUL, F. *v.* AGRINIER, H., 139
 RAPOORT, E. & PISTORIUS, C. W. F. T., Transitions in SrCO_3 , BaCO_3 , 192
 RAPSON, J. E., Carbonatite, *Rocky mts.*, 66
 RASHEED, A. Z. *v.* BHATTY, M. I., 103
 RASHKOVICH, L. N. & VARLAMOV, V. P., New Ca fluorosilicate, 108
 RASMUSSEN, K. *v.* PETERSEN, L., 93
 RATINOV, V. B. *v.* ROZENBERG, T. I., 8
 RATTÉ, J. C. & STEVEN, T. A., Volcanic rocks, *Colorado*, 69
 RATTIGAN, J. H., Aqueoglacial sequence, 71
 — Cycloic sedimentation, *New South Wales*, 155
 — Halloysite, *New South Wales*, 263
 RAU, H., Digenite, 27
 RAULT, M. *v.* LECERF, A., 191 ; VILLERS, G., 105
 RAUMER, J. VON, Inclusions in quartz, *Alps*, 220
 RAUMER, J. F. VON, Granite, *Mont-Blanc*, 332
 RAVICH, M. *v.* DEUTSCH, S., 81
 RAVICH, M. I., Water-salt systems, 191
 RAVIER, J. & CHENEVOY, M., Muscovite granites, *Pilat mt.*, 238
 RAYCIES, E. C., Iron ores, *Argentina*, 278
 RAYMAHASHAY, B. C., Rock alteration by hot springs, *Yellowstone Park*, 296
 RAYTBURD, T. M. *v.* SLONIMSKAYA, M. V., 180
 RAZIN, L. V. & KHVOSTOVA, V. P., Distribution of Pt metals, *Yakutia*, 112
 RAZINA, I., Analysis by, 237
 READ, M. *v.* DUCHESNE, J., 125
 REAY, A. V. *v.* HARRIS, P. G., 228
 REBHUN, M. *v.* NARKIS, N., 262
 RECKER, K., NEUHAUS, A., & LECKEBUSCH, R., Colour & luminescence of fluorites, 313
 REDDY, K. G. *v.* IKRAMUDDIN, M., 150
 REDDY, P. J. *v.* RAMAMURTHY, L., 249
 REED, G. W., Jr. & JOVANOVIC, S., Mercury in chondrites, 209
 — *v.* JOVANOVIC, S., 204
 REED, S. J. B., Phosphorous in octahedrite, 212
 — Perryite in chondrites, 300
 REES, A. L., Magnetic susceptibility of sands, 70
 REGIS, M. & REGIS, R., Crystal orientation

REGIS, R. v. REGIS, M., 83
 REHMAN, F. U. v. SHAMS, F. A., 101, 150
 REID, A. M. & COHEN, A. J., Pyroxene from enstatite achondrites, 299
 — & FREDRIKSSON, K., Chondrules, chondrites, 87
 — v. FREDRIKSSON, K., 87
 REITHLER, J.-C. & BOLFA, J., Complete titanomagnetite series, 284
 — v. BABKINE, J., 252
 REKHARSKII, V. I., Element distribution in igneous rocks, 113
 REMIZOV, V. I., Bauxite crystals, 141
 RÉMY, M. v. BORDET, P., 82
 RENAULT, J. R. v. PEACH, P. A., 97
 RENOUPEZ, A. J.-v. DONATI, J.-R., 169
 RENSON-SALME, R. v. MAYAUX, P., 4
 RÉRAT, B. & RÉRAT, C., Patterson diagrams of orthorhombic systems, 14
 RÉRAT, C. v. RÉRAT, B., 14
 REVERDATTO, V. V., Metamorphism at contact, *Siberia*, 215
 REVINA, L. D. v. LAVRUKHINA, A. K., 212
 REYNOLDS, D. G., Gold mine, *France*, 100
 REYNOLDS, J. H. v. HOHENBERG, C. M., 208
 REYNOLDS, R. C., Jr., Interstratified clay systems, 9
 — Mass absorption coefficients, 86
 REZNIKOV, A. P. & RODZYANKO, N. G., Pyroxenes, *Caucasus*, 217
 RIBBE, P. H. & COLVILLE, A. A., Structure of anorthite, 179
 — GIBBS, G. V., & JONES, N. W., Substitutions in humites, 266
 — v. COLVILLE, A. A., 269; CORLETT, M., 52
 RICHARDS, J. R., COOPER, J. A., & BLACK, P. M., Ages of intrusives, *New Zealand*, 2
 — WEBB, A. W., & COLEMAN, P. J., Age of basal schists, *British Solomon islands*, 2
 — v. COOPER, J. A., 255
 RICHARDS, S. M., Banded Fe formations, *Broken Hill*, (II), 21
 RICHTER, O., BLECHA, J., & DLOUHÝ, J., $\text{NaI}(\text{Ti})$ crystals, 104
 RICKARD, D. T., Synthesis of smythite, 285
 RICKE, W. v. MÜLLER, G., 297
 RICKENBACH, E. v. HÜGL, T., 185
 RIDGE, J. D., Zinc ores, *Tennessee*, 184
 RIDLEY, W. I., Volcanoclastic rocks, *Tenerife*, 63
 RIECKER, R. E. & ROONEY, T. P., Shearing of zeolitized tuffs, 160
 RIEDER, M., Accuracy of *d*-spacings, 4
 RIEDERER, J., Rapakivi granites, *Bavaria*, 323
 RIFE, D. L., Geodes, *Tennessee*, 78
 RIFFALDI, R. v. ROTINI, O. T., 90
 RIGAULT, G. v. GAZZONI, G., 171
 RIGBY, E. B. & CUTLEE, I. B., System $\text{Fe}_2\text{O}_3\text{-MgO}$, 192
 RILEY, G. H., Rhenium in molybdenites, *Australia*, 57
 RILEY, J. F., Cobaltiferous pyrite, *Central Africa*, 222
 RILEY, J. P. & TAYLOR, D., Trace elements in sea-water, 171
 — v. CHAN, K. M., 4, 171
 RILEY, L. B. v. HUFFMAN, C., Jr., 5
 RIMSAITE, J., Optically heterogeneous feldspars, *Canada*, 51
 — & LACHANCE, G. R., Heterogeneous minerals, 33
 RIMSKAYA-KORSAKOVA, O. M. v. GRUM-GRZHIMAYLO, S. V., 136
 RINALDI, C. A. v. ANGELELLI, V., 281
 RINEHART, C. D. v. HUBER, N. K., 65
 RING, J. v. GRAINGER, J. F., 254
 RINGWOOD, A. E., Pyroxene-garnet transformation, 287
 — & MAJOR, A., Transformation in pyroxenes, 287
 — v. GREEN, T. H., 287
 RIOTTE, C. & THIÉBAUT, J., Ophite, *Ariège*, 231
 RIVELINE-BAUER, J. v. POMEROL, C., 92
 RIVERO, P. M., White clays, *Venezuela*, 175
 RIVIÈRE, A. & VERNHET, S., Radioactivity of beach material, *Gulf of Lion*, 327
 — v. STEINBERG, M., 262
 RIVIÈRE, J. W. M. LA, Microbial S cycle, 38
 ROBBINS, M. v. ARLETT, R. H., 191
 ROBECK, R. C. v. HAWLEY, C. C., 272
 ROBERT, M., Evolution of granitic sands, 283
 — & PEDRO, G., Vermiculitization of phlogopite, 289
 — v. HÉNIN, S., 30
 ROBEETS, J. v. VEEVERS, J. J., 71
 ROBIE, R. A., BETHEKE, P. M., & BEARDSLEY, K. M., Mineral tables, 145
 ROBINSON, P., System $\text{Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 286
 ROBINSON, P. D. v. BLOSS, F. D., 84; FANG, J. H., 84
 ROBLOT, M.-M., CHAIGNEAU, M., & GIRY, L., Precambrian organic activity, *Manche*, 294
 ROBSON, G. R., BARE, K. G., & LUNA, L. C., Earthquake mechanism, 339
 ROCHE, A. v. COLIN, F., 162
 ROCHE, H. de la, Schists, *Pyrenees*, 39
 — v. ROUBAUT, M., 39
 ROCHE, J. v. DELIBRIAS, G., 82
 ROCKETT, T. J. & FOSTER, W. R., Stability of tridymite, 107
 RODDA, J. L. v. KOHLS, D. W., 127
 RODIONOV, D. A. & IVANOV, V. V., Estimation of average contents, 197
 RODRIGUEZ, A. M. I. = INIGEZ RODRIGUEZ, A. M.
 RODRIGUEZ, J. & ARRESE, F., Heat treatment of muscovite, 160
 — v. ARRESE, F., 161
 RODZIEWICZ, W. & GRZEDZICKI, K., Determination of K, 260
 RODZYANKO, N. G. v. REZNIKOV, A. P., 217
 ROEDDER, E., Ore-forming fluids, 97
 — & COOMBS, D. S., Inclusions in granite, *Ascension island*, 34
 ROEDER, P. v. CAMPBELL, F. E., 286
 ROELANDTS, L. & DUCHESNE, J. C., Analysis of silicate rocks, 259
 ROEING, C. & HECKRODT, R. O., Alteration of beryl, *S.-W. Africa*, 216, 304
 ROEVER, W. F. de v. ROEVER, W. P. de, 221
 ROEVER, W. P. de, Development of metamorphic belts, 73
 — & NIJHUIS, H. J., Plurifacial Alpine metamorphism, *Cordilleras*, 157
 — ROEVER, W. F. de, BEUNK, F. F., & LAHAYE, P. H. J., Ferrocarpholite, *Calabria*, 221
 ROGERS, J. v. LANDIS, C. A., 288
 ROGERS, J. J. W. v. MAHAN, S. M., 246
 ROGOVA, V. P. v. SIDORENKO, G. A., & KUZNETSOVA, N. N., Ba-francevillite, 55
 ROKACHEV, S. A., Fragmental sulphides, *Urals*, 99
 ROMAND, J. v. SCHELLMAN, J., 161
 ROMANENKO, G. N. v. IL'VITSKIY, M. M., 97
 ROMANOVA, M. A., Reflectance of sands, *Kara-Kum*, 161
 ROMANOVICH, I. F. v. DOBROKHOTOVA, E. S., 46
 ROMARIZ, C., Sedimentary rocks, *Portugal*, (IX), 148
 ROMERO, A., Clay minerals in sediments, *Pyrenees*, 92
 ROMERO, R. G. v. FERREIRO, V. J., 273
 RONG, SHU-QIN v. YE, JI-SUN, 4
 RONOV, A. B., BALASHOV, YU. A., & MIGDISOV, A. A., Rare-earths in sediments, 201
 — GIRIN, YU. P., KAZAKOV, G. A., & ILYUKHIN, M. N., Sedimentary differentiation, 36
 ROONEY, T. P. v. RIECKER, R. E., 160
 RÖSCH, S., Spherical growth of crystals, 249
 ROSCOE, C. & THOMAS, J. M., Dislocations in graphite, 160
 RÖSE, H. J., Jr. v. KARAKIDA, Y., 82; MILTON, C., 127; SKINNER, B. J., 296
 ROSEBOOM, E. H. v. TAKEDA, H., 270
 ROSEBOOM, E. H., Jr., System Cu-S, 26
 ROSEN, A. DE, Microcline-plagioclase relations, *Colettes*, 137
 ROSÉN, E. & MUAN, A., Stability of MgAl_2O_4 , 25
 — Stability of zircon, 28
 ROSENBERG, P. E., System $\text{CaCO}_3\text{-MgCO}_3\text{-FeCO}_3$, 27
 — Structure of topaz, 216
 ROSENTHAL, E. v. MAZOR, E., 297
 ROSHOLT, J. N., BUTLER, A. P., GARNER, E. L., & SHIELDS, W. R., Uranium fractionation in sandstone, *Wyoming & Colorado*, 294
 RÖSSEL, H. J., PÄLCHEN, W., OSSENKOPF, W., & TAUBERT, P., Tonsteins, *Germany*, 154
 ROSSET, C., Fossil inclusions in gypsum, *Aude*, 164
 ROSSI, F. v. COLBERTALDO, D. DI, 185
 ROSSI, G. v. DAL NEGRO, A., 267
 ROSSY, M. v. THIÉBAUT, J., 331
 ROST, F., Ultrabasic intrusives, 62
 — v. LENSCHE, G., 318
 ROST, R., Moldavite, 44
 — Anisotropy in moldavites, 214
 ROTH, C. B., JACKSON, M. L., LOTSE, E. G., & SYERS, J. K., Ferrous-ferrie ratio in vermiculite, *Colorado & Transvaal*, 262
 ROTHBAUER, R., ZIGAN, F., & O'DANIEL, H., Structure of bayerite, 269
 ROTHE, P., Alkali basalts, *Canary islands*, 230
 ROTHMAN, V. K. & MARKOVSKIY, B. A., Alkaline basalts, *Pacific Ocean*, 320
 ROTINI, O. T., LOTTI, G., & RIFFALDI, R., Heating of cation-saturated vermiculite, 90
 ROUBAUT, M., DELAFOSSE, R., LEUTWEIN, F., & SONET, J., Age of rocks, *Central African Republic*, 81
 — & ROCHE, H. de la, Granites & schists, *Pyrenees*, 39
 ROUSSEAU, J., Morphometry of sand grains, 240
 ROVSHA, V. S. v. MIKHAILOV, N. P., 62
 ROWBOTHAM, G. v. PHILLIPS, R., 288
 ROWE, M. W. v. CLARK, R. S., 122; FUNK, H., 300; PODOSEK, F., 213
 ROWLEY, E. B., Apatite in pyrrhotite, *New York*, 78
 ROY, D. M. v. SCHLAUDT, C. M., 193
 ROY, N. N. v. GAY, P., 309
 ROY, P. L., Scheelite, *Rio Grande*, 277
 ROY, R. v. WEBER, J. N., 174; WHITE, W. B., 31
 ROY, S. & PURKAIT, P. K., Manganese oxide minerals, *Madhya Pradesh*, 20
 ROZENBERG, T. I. & RUBININA, N. M., Phase investigations, 8
 — SMIRNOVA, I. A., & RATINOV, V. B., Crystallization of ettringite, 8
 ROZENTSVIT, A. O. & ÉPSHTEÍN, G. YU., Minerals from gels, 20
 ROZHKOV, I. S., Gold ores, *Mysore*, 278
 RUB, M. G., ASHIKMINA, N. A., & MAGIDOVICH, T. S., Accessory minerals in comagmatism, *USSR*, 7

— v. KOPTEV-DVORNIKOV, B. S., 7
 RUBEYKIN, V. Z. v. KRAYNOV, S. R., 40
 RUBININA, N. M. v. ROZENBERG, T. I., 8
 RUBRIGHT, R. D. v. STACEY, J. S., 168
 RUCKLIDGE, J., Computer programme for microprobe data, 84
 RUCKLIDGE, J. C. v. FAWCETT, J. J., 60 ; FITZGERALD, A. C., 277
 RUDEL, A. v. DANTIER, M., 247
 RUDENKO, I. M. v. KUZNETSOVA, S. V., 291
 RUDNITSKAYA, E. S. v. SEMENOV, E. I., 225
 RUMEAU, J. L. v. KULBICKI, G., 37
 RUMYANTSEV, G. S. v. KOLESNIKOV, L. V., 311 ; RAKCHEYEV, A. D., 311
 RUNCORN, S. K., Convection in Moon, 254
 — v. MASSEY, H., 253
 RUNDKVIST, D. V., Temperature distribution during mineralization, 72
 — v. NIKITIN, V. D., 229
 RUSAKOV, L. N., GOROKH, A. B., & DUBROVIN, A. S., Crystallization of slags, 8
 — — — KADARMETOV, Kh. N., Reduction of chromite ores, 8
 — NOVOKHATSKI, I. A., LENEV, L. M., DUBROVIN, A. S., & SAVINSKAYA, A. A., Slags from ferromolybdenum smelts, 8
 RUSETSKAYA, E. P. v. ERMOLENKO, N. N., 8
 RUSINOV, V. L. v. LOGINOV, V. P., 99
 RUSSELL, F. M., Muon tracks in mica, *India & Africa*, 137
 RUSSELL, J. D. v. CRUZ, M., 263
 RUSSELL, R. V., Palaeocurrents in deltaic sediments, *Sweden*, 155
 — v. GAVELIN, S., 155
 RUSTSCHEV, D. D., SCHOPOV, G. K., DRAGOSTINOV, P., KONSTANTINOWA, V., & NANKOWA, P., Pitch, pitch coke, 189
 RUTISHAUSER, H. v. ZURBUCHEN, M., 324
 RUTTEN, M. G. & EVERDINGEN, R. O. van, Rheo-ignimbrite, *Norway*, 317
 RZHITSKIY, V. O., BYKOV, I. N., TOCHILIN, M. S., KURYLEVA, N. A., & MOLOTKOV, S. P., Ultrabasic explosion breccia, *Voronezh*, 149
 RYABCHIKOV, I. D., Two-feldspar geologic thermometer, 283
 — v. PERCHUK, L. L., 283
 RYBA, E., History of crystallography, 178
 RYBACH, L. & NISSEN, H.-U., Alkalies in adularia, 42
 — v. DIETRICH, V., 185 ; FÖHN, P., 293
 RYBAKOVA, M. M. v. MANUYLOVA, M. M., 50
 RYLEYEV, A. V. v. SOKOLEV, V. A., 321
 RYLOV, G. M. v. BERZINA, A. P., 50
 RYZHENKO, B. N., Hydrolysis of sodium silicate, 190
 — v. KHITAROV, N. I., 24

SAADALLAH, A. A. v. HAGNI, R. D., 21
 SAALFELD, H., NiAl_2O_4 spinel, 25
 — v. KRAEFT, U., 51
 SAAS, A. v. JACQUIN, F., 203
 SABATIER, G. v. HEEZEN, B. C., 91
 SABELLI, C. v. COCCO, G., 181 ; CORAZZA, E., 181, 270
 SABINE, P. A., Wall-rock alteration, *Cornwall*, 184
 — & WATSON, J. V., Ages of rocks & minerals, *British Isles*, 2
 — — Ages of rocks & minerals, *British Isles*, 168
 SABLIMA, T. M., Analysis by, 222
 SABU, D. D. & KURODA, P. K., Plutonium in early solar system, 207
 SAD, J. H. G. & DUTRA, C. V., Age of zircons, *Minas Gerais*, 167
 — v. GUIMARÃES, D., 236
 SADANAGA, R., NISHIMURA, T., & WATANABE, T., Jimboite, 96
 — & SUENO, S., Structure of Ag_2S , 269
 — v. TAKEUCHI, Y., 95
 SADASHIVIAH, M. S. & SUBBARAYUDU, G. V., Mylonites, *India*, 322
 — & TADKOD, M. A. G., Salite from skarns, *Mysore*, 305
 — & TENGINKAI, S. G., Piemontite-bearing rocks, *Gujarat*, 46
 — v. DEVARAJU, T. C., 150 ; IKRAMUDDIN, M., 150, 322 ; JAMKHANDI, M. S. R., 150 ; MAHABALESWAR, B., 157
 SÁENZ, I. M. de, Alkali feldspar, *Uruguay*, 66
 — Alkali feldspar crystallization, 137 —
 SAFIANNIKOFF, A., Pyrochlore, *Luesche*, 312
 — & VAN WAMBEKE, L., Beryl-bearing pegmatites, *Congo*, 322
 SAFONOV, V. S. v. KOLTYPIN, S. N., 321
 SAFRONOVA, G. F., Micaceous pegmatites, *Karelia*, 199
 SAGATOVIC, A., Bentonites, *Baie Mare*, 13
 SAGON, J. P., Chloritoid, margarite in schists, *Châteaulin*, 331
 — Paragonite in schists, *Châteaulin*, 331
 SAHA, A. K. v. SARKAR, S. N., 2
 SAHA, P. v. GANGULI, D., 28
 SAHAMA, T. G., Iron in melilite, 133
 — KNORRING, O. von, & LEHTINEN, M., Cookeite from pegmatite, *Mozambique*, 308
 — & LEHTINEN, M., Melilite, 133
 SAHORES, J., Reactions followed by diffractometry, 169
 SAINI, G. R., Nomenclature of soil carbonates, 154
 SAINSBURY, C. L. & HAMILTON, J. C., Lode Sn, 188
 — — & HUFFMAN, C., Jr., Trace element cycle, *Alaska*, 298
 SAINTE-SUZANNE, J. D. v. DE LAPPARENT, A. F., 19
 SAKAČ, K., Fossiliferous bauxite, *Dalmatia*, 175
 SAKAMOTO, K. v. TANAKA, S., 289
 SALASKI, W., Clay deposits, *Lubin*, 243
 SAL'DAU, E. P. v. PAVLOVA, I. G., 53
 SALISBURY, J. W. & ADLER, J. E. M., Lunar soil, 80
 SAL'NIKOVA, V. S. v. BOZHENOV, P. I., 8
 SALOMONOVICH, A. E., Lunar radio brightness distribution, 254
 SALOTTI, C. A. & FOUTS, J. A., Cordierite-garnet gneiss, *Georgia*, 159
 SALVADO, M. G. v. CANILHO, M. H., 148
 SAMARTSEVA, A. G. v. NIKOLAYEV, D. S., 296
 SAMOLOVITCH, M. I. v. BALITSKII, V. S., 138
 SÁMONI, Z. v. PANTÓ, G., 256 ; SZALAY, S., 297
 SANDERS, J. V. v. JONES, L. H. P., 196
 SANDU, D. v. PETRULIAN, N., 186
 SÄNGER, G. v. PLEITH, K., 271
 SANGER, P. L. v. DAWSON, B., 182
 SANTOS, A. M. v. LEWIS, R. W., Jr., 298
 SANTOS, J. P. = PAULA SANTOS, J.
 SANVER, M. v. TARLING, D. H., 337
 SAPRINKA, T. V. v. GERASIMOVSKY, V. I., 6
 SARAF, C. L. v. PANDYA, J. R., 160
 SARCIA, C. v. GOÑI, J. C., 284
 SARCIA, J. A., Distribution of mineralizations, *Canada*, 81
 SARKAR, S. N., GERLING, E. K., POLKANOV, A. A., & CHUKROV, F. V., Precambrian geochronology, *India*, 82
 — SAHA, A. K. & MILLER, J. A., Ages of metamorphic rocks, *India*, 2
 SARTORI, F., Volkonskoite, *Livorno*, 11
 — Tuffite, *Umbria*, 61, 232
 — & D'ACHIARDI, L. Q., Sandstone, *Ofanto river*, 70
 SARUYAMA, I. v. SHIRAKI, T., 113
 SASS, E. v. GROSS, S., 245
 SASSI, F. P. v. GREGGANIN, A., 248

SASTRY, A. R., RAJU, G. J. V. J., & RAO, C. V., Titaniferous magnetite, *Andhra Pradesh*, 103
 SASTRY, A. V. R. & RAO, A. N., Trace elements in pyrrhotites, magnetites, *Saxony*, 140
 SATALKINA, M. A. v. OKOROKOV, S. D., 8
 SATHE, R. V. & CHAUDHARY, P. D., Stellated wollastonite, *Gujarat*, 47
 — & RANADE, M. S., Pegmatitic hornblende *Bilgi*, 306
 SATO, M., Electrochemical geothermometer 103
 — v. KURODA, Y., 136
 SATO, S. v. TAKEMATSU, N., 298
 SATSUKI, YU. I. v. SOKOLEV, V. A., 321
 SATTRAN, V. v. KOPECKÝ, L., 62
 SAUÉP, F., Mercury mineralization, *Spain*, 275
 SAUVAGE, J. v. GLANGEAUD, L., 147
 SAVAGE, J. W. v. WIEDERSICH, H., 141
 SAVINA, V. G. v. SOFRONOV, V. S., 8
 SAVINSKAYA, A. A. v. RUSAKOV, L. N., 8
 SAVU, H., Mesozoic ophiolites, *Romania*, 319
 SAVUL, M., MOVILEANU, A., DONOS, I., & DONOS, M., Cretaceous carbonate rocks, *Dobrogea*, (III), 116
 — — — Cretaceous carbonate rocks, *Dobrogea*, (I, II), 243
 SAWAMURA, T., SUZUKI, T., AONO, C., & TSURUTA, K., Pyrrhotite, *Kochi*, 140
 SCAINI, G., PASSAGLIA, E., & CAPELDI, S., Hydrotalcite, *Vicenza*, 58
 — v. ALIETTI, A., 139
 SCARFE, C. M. & WYLIE, P. J., Dehydration of serpentine, 29
 SCHAEFFER, O. A. v. FUNKHOUSER, J., 301
 SCHAIRER, J. F., Tholeiitic & alkali basalts, 87
 SCHALL, P., Colour centres in MgO , 76
 SCHALLER, W. T., CARON, M. K., & FLEISCHER, M., *Ephesite*, *South Africa*, 304
 — v. VLISIDIS, A. C., 54
 SCHANDORF, J. R. H. v. KERBYSON, J. D., 289
 SCHAUDY, R., KIESL, W., & HECHT, F., Analysis of meteorites, 207
 SCHEERE, J. v. LAMBRECHT, L., 93
 SCHELLMAN, J., VENKATARAMAN, C., DAMANY, H., & ROMAND, J., Dichroic absorption in calcite, 161
 SCHERILLO, A., FRANCO, E., DI GIROLAMO, P., & STANZIONE, D., Crateric forms, *Campania*, 240
 SCHIAFFINO, L., Biotite from granite, *Elba*, 218
 — v. BARZON, G. P., 11 ; FRANZINI, M., 49
 SCHIAVINATO, G. v. CRESPI, R., 231
 SCHIDLOWSKI, M. v. PRASHEWSKY, A. A., 203
 SCHILLING, J. H., Artinite, *Nevada*, 78
 SCHNEIZER, M. v. NORDEMAN, D., 123
 SCHIND, D. R., Determination of silica, 85
 SCHLAUDT, C. M. & ROY, D. M., System periclase-forsterite-spinel, 193
 SCHLICHTA, P. J., Dislocation-strain energy & morphology, 334
 — Salt crystals, 262
 SCHMALLZRIED, H. v. HOHMANN, H. H., 15
 SCHMID, R., Metamorphic rocks, *Italy*, 332
 SCHMINCKE, H.-U., Flow directions, *Washington*, 67
 SCHMITT, R. A., SMITH, R. H., EHMAN, W. D., & MCKOWN, D., Silicon in meteoritic chondrules, 209
 — v. HASKIN, L. A., 87 ; LINN, T. A., Jr., 30
 SCHNETZLER, C. C., PHILPOTTS, J. A., THOMAS, H. H., Rare-earths, *Ba* in tektites & rocks, *Ivory Coast & Ghana*, 21

— *v. PHILPOTTS, J. A.*, 35, 292
 SCHNOES, H. K. *v. HAUG, P.*, 203
 SCHOEN, R. & WHITE, D. E., Hydrothermal alteration, *Nevada*, 97
 SCHOENFELDER, J. *v. WEY, R.*, 111
 SCHOLZ, C. H., Rock deformation in compression, 250
 SCHOLZ, G. *v. SCHWIETE, H. E.*, 10
 SCHOFF, J. M., Peat, coal, graphocite, 70
 SCHOPOV, G. K. *v. RUSTSCHEV, D. D.*, 189
 SCHREINER, G. D. L. & VERBEEK, A. A., Potassium near granite-shale contact, 117
 — *v. VERBEEK, A. A.*, 115
 SCHREYER, W., Metamorphic rocks, 74
 SCHROLL, E. & GROHMANN, H., K/Rb in magmatic rocks, 34
 — *v. HUBER-SCHAUSBERGER, I.*, 56
 SCHUBNEL, H.-J. *v. LAURENT, Y.*, 162; *MARION, C.*, 196
 SCHUELE, D. E. *v. WONG, C.*, 76
 SCHUILLING, R. D., Retrograde & progressive metamorphism, 330
 — Tin belts, *Atlantic Ocean*, 276
 — & VINK, B. W., Titanium minerals, 105
 SCHÜLLER, A., Sheet minerals, 48
 SCHULMAN, N. *v. YARON, F.*, 257
 SCHULTE, F. J. *v. NATHAN, S.*, 69
 SCHULZ, O., Lead-zinc ores, *Carinthia*, 184
 — Origin of baryte, *Gailtal Alps*, 184
 SCHULZE, E. G. & EL-HINNAWI, E. E., Basic sills & dykes, *Schierberg*, 62
 SCHULZE, H. J. *v. JOST, K. H.*, 258
 SCHÜRMANN, H. M. E., Precambrian rocks, *Red Sea*, (book), 7
 SCHÜRMANN, K., Cummingtonite, 288
 — *v. HELLNER, E.*, 110
 SCHUST, F., Orientation of feldspars, 229
 SCHWANDER, H. & WENK, E., Basic plagioclases, *Leptine Alps*, 51
 — *v. WENK, E.*, 51
 SCHWEIGART, H., Ironstones, *South Africa*, 278
 — & RAHDEN, H. *v.*, Oolitic texture in pyrite, *South Africa*, 70
 SCHWEIDTNER, W. M. & CLARK, A. R., Structure of domes, *Axel Heiberg island*, 324
 SCHWERTMANN, U., Crystallization of Fe(OH)_3 , 10
 SCHWIELE, H. E. & BAUR, R., Synthetic montmorillonites, 10
 — & SCHOLZ, G., Montmorillonite, *Mainburg*, 10
 — ZIEGLER, G., & KRIESCH, C., Dehydration of montmorillonite, 10
 SCOO, J. H., Analysis by, 215
 SEAGER, A. F., Cerussite, 160
 — *v. BANFIELD, J.*, 334; *GAY, P.*, 260
 SEAL, M., Diamond coat, 139
 SEDERHOLM, J. J., Granites & migmatites, (book), 88
 SEE, G. T. *v. LOUGHNAN, F. C.*, 163
 SEFF, K. & SHOEMAKER, D. P., Zeolite sorption complexes, (I), 179
 SEIDEL, G. *v. PUFF, P.*, 243
 SEKIYA, H. *v. HIBINO, T.*, 28
 SELLA, C. & DEICHA, G., Growth of NaCl on muscovite, 111
 SELLSTEDT, H., ENGSTRAND, L., & GEJVALL, N.-G., Radiocarbon dating of bone, 3
 SEMENOV, A. I. & SMYSLOV, A. A., Ore mineralization, 198
 SEMENOV, E. I., BUKIN, V. I., BALASHOV, Yu. A., & SØRENSEN, H., Joaquinite, *Greenland* & *California*, 304
 — & BYKOVA, A. V., Hambergite in pegmatite, *Baikal*, 313
 — KATAYEVA, Z. T., & RUDNITSKAYA, E. S., *Yttrotungstite*, 225
 — KULAKOV, M. P., KOSTYNNINA, L. P., KAZAKOVA, M. E., & DUDYKINA, A. S., Scandium in pegmatites, *Kazakhstan*, 53
 — *v. DUSMATOV, V. D.*, 53
 SEMENOV, N. N. *v. ERSHOV, V. M.*, 22
 SEMEVSKIY, D. V. *v. GROSSWALD, M. G.*, 168
 SENDEROV, E. E. & KHITAROV, N. I., Natrolite formation, 198
 SENDEROV, V. M. *v. DORFMAN, M. D.*, 253; *GODOVIKOV, A. A.*, 251
 SEN GUPTA, P. K. *v. JOHNS, W. D.*, 14, 269
 SEN GUPTA, P. R. *v. DAS GUPTA, S. P.*, 19
 SERDYUCHENKO, D. P., Metamorphic amphiboles, *Yakutia*, 405
 — GLEBOV, A. V., & PAVLOV, V. A., Calcioaegirine, *Yakutia*, 129
 SEREBRYANAYA, N. R., Tetragonal chalcocite, 310
 SERGEANT, G. A. *v. EVANS, W. H.*, 85; *YOUNG, B. R.*, 307
 SERGEEV, V. N. & KUZ'MIN, A. M., Magnetite crystals, 75
 SERGEYEV-BOBB, A. A. *v. NAUMOV, G. B.*, 218
 SESHAIAH, P. *v. MAHADEVAN, T. M.*, 45
 ŠESTÁK, B. *v. KADEČKOVÁ, S.*, 104
 SETHNA, S. F. *v. SUKHESWALA, R. N.*, 236
 SEVÍČK, J. & FOJTAŠEK, J., Orientation of Ge, Si , 104
 SGARLATA, F. *v. ONORATO, E.*, 15
 SHACKLETTE, H. T. & CUTHBERT, M. E., Iodine in plants, 206
 SHADLUN, T. N., Iron in sphalerites, *Transbaikal*, 140
 SHAFIQLAH, M. *v. CURRIE, K. L.*, 65
 SHALIMOV, Z. N. *v. ERMOLENKO, N. N.*, 8
 SHAMS, F. A. & REHMAN, F. U., W-Mo minerals, *West Pakistan*, 101
 — Granitic complex, *West Pakistan*, 150
 SHAPIRO, I. I. & COLOMBO, G., Theory of Chandler wobble, 253
 SHAPOVALOV, V. S. *v. PYATIKOP, P. D.*, 8
 SHAPOVALOVA, M. G., Analysis by, 179
 SHARAFIYEV, M. SH. & OLOVA, G. B., Cement clinkers, 8
 SHARAI, V. N., ZHUNINA, L. A., MASURENKO, V. D., & LUK'YANOVA, T. T., Crystallization of glasses, 8
 — *v. ERMOLENKO, N. N.*, 8; *ZHUNINA, L. A.*, 9
 SHARAS'KIN, A. YA. *v. BALASHOV, YU. A.*, 197
 SHARMA, R. P. *v. SRIVASTAVA, J. K.*, 252
 SHARP, J. H. *v. ADDISON, W. E.*, 288; *BRINDLEY, G. W.*, 289
 SHARP, W. E., Deposition of quartz, calcite, 28
 SHARP, W. N. & GUALTIERI, J. L., Geochemical anomalies, *Colorado*, 271
 SHAW, C. W. *v. BAXTER, J. W.*, 244
 SHAW, D. M., K/Rb fractionation, 292
 SHAW, H. R., Hydrogen osmosis, 87
 SHAW, D. R. & GRANGER, H. C., Uranium ore rolls, *Colorado* & *Wyoming*, 272
 — POOLE, F. G., & BROBST, D. A., Bedded baryte, *Nevada*, 23
 SHCHASTLIVIYI, V. P. *v. CHIZHIKOV, D. M.*, 172
 SCHERBA, G. N., ZAMYATINA, G. M., KALININ, S. K., & MUKHLYA, K. A., Germanium in greisens, *Kazakhstan*, 200
 SCHERBAKOV, V. P. *v. MARCENKO, E. YA.*, 200
 SCHERBAKOV, YU. G., Ores in granitoids, 96
 — Evolution of crust, 326
 SCHERBINA, V. V. & ABAKIROV, SH. A., Thorium in hydrothermal solutions, 198
 — *v. URUSOV, V. S.*, 25
 SHCHIPANOVA, O. V. *v. ANDRIEVSKAYA, N. F.*, 224
 SHCHUKAREVA, L. A. *v. BELIK, YA. G.*, 8
 SHEDLOVSKY, J. P., CRESSY, P. J., Jr., & KOHMAN, T. P., Cosmogenic radioactivity in chondrites, 209
 SHEI, KWANG-HONG *v. YUAN, CHI-LIN*, 67
 SHELDICK, G. M. *v. ALCOCK, N. W.*, 265
 SHELLY, D., Myrmekite-like intergrowths, *NW Scotland*, 59
 SHELTON, W., Pegmatite, *Connecticut*, 46
 — Minerals from mine dumps, *Connecticut*, 163
 SHEMANIN, V. I., Synthetic diamond crystals, 75
 SHENDY, G. K. *v. SRIVASTAVA, J. K.*, 252
 SHEPARD, A. O. & STARKEY, H. C., Heulandite, clinoptilolite, 52
 SHEPPARD, R. A. *v. EUGSTER, H. P.*, 129
 SHERIDAN, D. M., MAXWELL, C. H., & ALBEE, A. L., Geology, U ores, *Colorado*, 101
 SHERWOOD, P. T., Red clays, *Keuper Marl, Africa & England*, 13
 SHEVCHENKO, E. V., Mineral growth in intrusions, 113
 SHI, SHU-LIN *v. YE, JI-SUN*, 4
 SHIBUYA, G. & KIZAKI, K., Ilmenite, *Antarctica*, 311
 SHIDARA, T., Analysis by, 307
 SHIDIKOVA, A. P. *v. ERMOLAEV, N. P.*, 296
 SHIELDS, W. R. *v. ROSHOLT, J. N.*, 294
 SHILLIN, N. L. *v. VOLYNETS, O. N.*, 275, 320
 SHIMA, M. & HONDA, M., Analysis of chondrites, 209
 — Lithium in chondrites, 299
 SHIMAZU, M., Common hornblendes, *Kitakami mts.*, 135
 — Absorption of reflected X-rays, 257
 SHIMIZU, H. *v. TOYOGUCHI, T.*, 259
 SHIMIZU, N. & BANNO, S., Biotite in metamorphic rocks, 136
 SHIMIZU, T., Determination of Sc, 86
 SHIMKUS, K. M. *v. BATURIN, G. N.*, 201
 SHIMO, B. *v. PECSI-DONATH, E.*, 221
 SHIMODA, N. *v. AOKI, Y.*, 137
 SHIMOJI, M. & HOSHINO, H., Ionic crystals. (I), 77
 — *v. HOSHINO, H.*, 77
 SHIRAKI, T., HAMADA, S., TAKAHASHI, H., & SARUYAMA, I., Chalcopyrite, *Ashio mine*, 113
 SHIRAKI, Y. *v. UDAGAWA, S.*, 179
 SHIRO, Y. *v. IISHI, K.*, 335
 SHIROZU, H., Iron chlorites, 111
 — Kasoite, 138
 SHISHENINA, E. P. *v. GULYAYEVA, L. A.*, 41
 SHIMAKIN, B. M. *v. MANUYLOVA, M. M.*, 50
 SHMELEVA, N. A., Glass industry, 8
 SHOEMAKRR, D. P. *v. SEFF, K.*, 179
 SHORT, J. M. *v. GOLSTEIN, J. I.*, 124, 210
 SHORT, N. M. *v. MATTOX, R. B.*, 261
 SHOTTON, F. W., Dating methods, 3
 SHTERENBERG, L. E., Manganese ores & tectonic evolution, *Ukraine*, 279
 SHTEYNBERG, D. S. & MALAKHOV, I. A., Iron in serpentinites, 149
 SHTRIKMAN, S. *v. EIBSCHUTZ, M.*, 27, 182
 SHUGUROVA, N. A., CO_2 in inclusions, 198
 SHUKLA, R. K. *v. DE, S. K.*, 263
 SHUKOLYUKOV, YU. A. & TOLSTIKHIN, I. N., Krypton, xenon in uraninites, *Karelia*, 3
 — & ASHKINADZE, G. SH., Argon in uraninites, *Karelia*, 41
 — *v. GERLING, E. K.*, 167; *KOMAROV, A. N.*, 218
 SHUMYATSKAYA, N. G. *v. VORONKOV, A. A.*, 16
 SHUSTROV, B. N. *v. ALIMOVA, I. A.*, 5
 SHVAKOVA, A. A., Analyses by, 135, 221

SHVARTSMAN, M. D. *v.* LARIONOV, V. V., 202
 SHVETS, V. V. *v.* PLAVSHUDIN, V. G., 313
 SIDDIQUE, M. K. H., Palygorskite clays, *Andhra Pradesh*, 11
 SIDORENKO, A. P. *v.* VASYUTINSKIY, N. A., 9
 SIDORENKO, G. A. *v.* DOBROKHOTOVA, E. S., 46; ROGOVA, V. P., 55; SKOROBOGATOVA, N. V., 226
 SIEDNER, G., Igneous complex, *S.-W. Africa*, 235
 — *v.* MANTON, W. L., 81
 SIEGERT, C., Volcanites, *Halle*, 233
 — Chemistry of volcanites, *Halle*, 233
 SIGNER, P. *v.* NYQUIST, L. E., 301
 SIVOLA, J. *v.* HAAPALA, I., 312; VORMA, A., 127; WINTERHALTER, B., 117
 SIKLOSI, L. *v.* DUDICH, E., Jr., 295
 SILICHEV, M. K., Depth facies of carbonatites, 293
 SILIN, YU. *v.* DEUTSCH, S., 81
 SILLITO, R. H. *v.* CLARK, A. H., 2
 SILVER, L. T. *v.* DUKE, M. B., 121
 SIMKIN, T., Flow differentiation in sills, *Skye*, 227
 SIMMLER, R., Sandstone, *SW Germany*, 328
 SIMONEIT, B. R. *v.* BURLINGAME, A. L., 295
 SIMONETTI, A. *v.* BIANCONI, F., 223
 SIMONS, J. *v.* GALE, N. H., 255
 SIMONS, P. Y. & DACHILLE, F., High-pressure phase of TiO_2 , 269
 SIMPSON, B., Rocks & minerals, (book), 7
 SIMPSON, D. R., Carbonate-apatite, 26
 SIMPSON, J. G. & DRYSDALL, A. R., Graphite, *Njoka*, 282
 SIMS, P. K. & GABLE, D. J., Precambrian rocks, *Colorado*, 75
 SINCLAIR, A. J., Source rocks of anomalous Pb, *British Columbia*, 1
 SINCLAIR, I. G. L., Origin of bauxite, *Jamaica*, 281
 SINGER, A., Argillation of tuffs, *Israel*, 12
 — Clay minerals, *Galilee*, 175
 — Non-clay fractions of soils, *Israel*, 264
 SINGH, A. K., Correction for Weissenberg photographs, 258
 SINGH, B. S., Identification of Sn minerals, 141
 SINGH, D. S. & BEAN, J. H., Tin minerals, *Malaya*, 141
 SINGE, J. B., Boron in Keuper sediments, *Germany*, 294
 SINGH, S., Orthopyroxene-bearing rocks, *Guyana*, 159
 SINGH, V. N., Bentonitic beds, *Giessen*, 13
 SINHA, D. P. v. MACKAY, A. L., 77
 SINKANKAS, J., High-pressure epoxy impregnation, 170
 — Gems, (book), 262
 SIN'KOVA, L. A. *v.* IVANOV, V. I., 182
 Šfr, V., MATUŠEK, M., & VLACH, J., Synthesis of single crystals, 104
 SIRZHIDINOV, N. A., Cordierite transformations, 8
 SITNIN, A. A., Granitoid micas, *USSR*, 49
 SIZOVA, R. G. v. MAKAROV, N. N., 46
 SKÁLA, M., Corundum single crystals, 104
 SKARZHINSKIY, V. I. *v.* KUZNETSOVA, S. V., 291
 SKIDMORE, E., Greenockite, *New Jersey*, 78
 SKINNER, B., Cocinerite discredited, 140
 SKINNER, B. J., System As-Sb, 284
 — WHITE, D. E., ROSE, H. J., & MAYS, R. E., Sulphides in brine, *California*, 296
 SKIPPER, G. B. *v.* EUGSTER, H. P., 87
 SKOMOROVSKAYA, L. A. *v.* BELIK, YA. G., 8
 SKOROBOGATOVA, N. V., SIDORENKO, G. A., DOROFEEVA, K. A., & STOLYAROVA, T. I., Plumbopyrochlore, *Urals*, 226
 SKRIPCHENKO, N. S., Emplacement of massive pyrite, 182
 — Oxidation-reduction potentials, 290
 — DOBROKHOTY, N. A., & TAMBIYEV, A. S., Chalcopyrite in pyrite, *Caucasus*, 113
 SKRZHINSKAYA, V. I., Analysis by, 55
 SKURNIK, S. *v.* GLASNER, A., 282
 ŠKvor, V., Geological development, *Bohemia*, 332
 SLÁNSKÝ, E. *v.* POVONDRA, P., 78
 SLATKINE, A., Cassiterite, *Muhurgwe*, 188
 — Primary Sn ores, *Lutsiro*, 188
 SLAVYANOVA, L. V. *v.* GALITSYN, M. S., 296, 297
 SLIVKO, M. M. & VOSKRESENSKAYA, I. E., Growth of tourmaline, 109
 SLONIMSKAYA, M. V. & RAYTBURD, T. M., Water in kaolinite & montmorillonite, 180
 SLUTSKIY, A. B. *v.* KHITAROV, N. I., 31
 ŠMÍD, J., Quartz single crystals, 104
 SMIRNOV, L. Y. & KONONOVA, L. N., Uranium in atmospheric aerosols, 42
 SMIRNOVA, I. A. *v.* ROZENBERG, T. I., 8
 SMIT, P. J. & MAREE, B. D., Rock densities, *South Africa*, 253
 SMITH, A. R. *v.* WOLLENBERG, H. A., 230, 251
 SMITH, C. H. *v.* IRVINE, T. N., 227
 SMITH, D. B. & FRANCIS, E. A., Geology, *Durham*, 147
 SMITH, G. E. *v.* KELLER, W. D., 207; SMITH, W. H., 244
 SMITH, I. B. *v.* GLASSER, L. S. D., 266
 SMITH, J. V., Ring framework structures, 93
 — & DOWELL, L. G., Na-type A zeolite, 269
 — *v.* MOORE, P. B., 127; NEWTON, R. C., 288
 SMITH, J. W. & MILTON, C., Dawsonite, *Colorado*, 58
 — *v.* BROOKS, J. D., 116
 SMITH, M. A. *v.* GUTT, W., 26
 SMITH, M. L. & FRONDEL, C., Layered minerals, 314
 SMITH, P. J., Palaeomagnetic field intensity, 161
 — Titanomagnetites, ferrian ilmenites, 223
 — Geomagnetic field reversal, *Scotland*, 337
 SMITH, R. E., Amygdales in metabasalts, *New South Wales*, 324
 SMITH, R. H. *v.* SCHMITT, R. A., 209
 SMITH, R. M. v. GARDNER, L. S., 280
 SMITH, W. H. & SMITH, G. E., Drill cores from coalfields, *Illinois*, 244
 SMITHSON, S. B. & BARTH, T. F. W., Pre-cambrian granite, *Norway*, 331
 SMOES, S. *v.* DROWART, J., 24
 SMOLARSKA, I., Dolomitic rocks, *Silesia-Cracow basin*, 154
 — Lead-zinc ores, *Trzebionka*, 184
 SMOLIN, P. P., Geochemical dispersion of elements, 206
 SMOLUCHOWSKI, R., Planet Jupiter, 81
 SMYSLOV, A. A. *v.* SEMENOV, A. I., 198
 SNAVELEY, P. D. *v.* PETERMAN, Z. E., 238
 SNELLING, N. J. *v.* CLARK, A. H., 2
 SNETSINGER, K. G., Accessory minerals in granites, *Sierra Nevada*, 34
 — Allophane in plagioclase, *California*, 51
 — Ba-V-muscovite, *California*, 136
 — Pleochroic haloes in granites, *Sierra Nevada*, 218
 — & KEIL, K., Analysis with laser microscope, 260
 — & BUNCH, T. E., Chromite from chondrites, 122
 — *v.* BUNCH, T. E., 122
 SNYMAN, C. P., Thucholite, *Witwatersrand*, 185
 SOBOLEV, N. V., Jr., Eclogite clinopyroxenes, *Yakutia*, 305
 — & KUZNETSOVA, I. K., Eclogites, garnet pyroxenes, *Yakutia*, 216
 SOBOLEV, R. N., DOROKHOV, I. L., BORSHCHEVSKY, YU. A., Age of granitoid *Topar*, 257
 SOBOLEV, V. S., Isomorphous replacement, 2
 — Incongruent melting, 103
 — *v.* KEPEZHINSKAS, K. B., 307
 SOBOLEVA, S. V. *v.* ZVYAGIN, B. B., 16, 306
 SÖDERQUIST, R. & DICKENS, B., Solid state chemistry, (I), 26
 SÖDERSTRÖM, L., Kimberlites, *Sweden*, 14
 SODOMKA, L., Surface quality of single crystals, 104
 SOEN, O. I., Emplacement of granite, *Portugal*, 324
 SOFOULIS, J., Bauxite, *Western Australia*, 2
 SOFRONOV, V. S., OL'GINSKI, A. G., SAVINOV, V. G., & MCHEDLOV-PETROSYAN, O. P., Artificial mineral fibres, 8
 SOGA, N., Elastic constants of garnet, 24
 — Sound velocities in α -quartz, 250
 — & ANDERSON, O. L., Elasticity of tektites, 214
 SOKOLOV, V. A., GALDOBINA, L. P., RYLEYEV, A. V., SATSUK, YU. I., SVETOV, A. P., HEISKANEN, K. I., Volcanic complex, *Karelia*, 321
 SOKOLOV, YU. A. *v.* VERTUSHKOV, G. N., 7
 SOKOLOV, YU. M. *v.* MANUYLOVA, M. M., ŠOLC, Z., Solutions near growing crystals, 10
 SOLODOV, N. A., Ionization potential, critical concentration, 289
 SOLOMINSKAYA, B. A. *v.* GLADKIKH, V. S., 233
 SOLOMON, M., Possible fossil gossans, *Tasmania*, 279
 — & GREEN, R., Chart for modal analysis, 1
 SOLOMONIDA, N. L. *v.* EL'IANOV, A. A., 234
 SOLOV'YEV, V. O., Igneous activity, *Maritime Kray*, 321
 SOLOV'YEV, Z. A. *v.* MOISEYENKO, U. I., 33
 SOMASEKAR, B., MACHIGAD, B. S., NAGANNA, C., Riebeckite syenite, *Andhra Pradesh*, 48
 SOMMER, J., Determination of textures, 16
 SOMMERFELD, R. A., Quartz solution reaction, 193
 SONET, J. *v.* BONHOMME, M., 257; ROUBAULT, M., 81
 SORANTIN, H. *v.* HÖFLER, H., 207
 SØRENSEN, H., Formation of ultramafic rocks, 228
 — *v.* SEMENOV, E. I., 304
 SOTNIKOV, V. I. *v.* BERZINA, A. P., 50, 187
 NIKITINA, E. I., 58
 SOURISSE, C. v. KULBICKI, G., 172
 SPEARS, D. A., Tonstein, *Staffordshire*, 11
 — *v.* TAYLOR, R. K., 202
 SPEIDEL, D. H., System MgO - FeO - Fe_2O_3 - SiO_2 , 192
 — & OSBORN, E. F., System MgO - FeO - Fe_2O_3 - SiO_2 , 109
 SPENCER, A. B. & CLABAUGH, P. S., Computer programme for fabric diagrams, 3
 SPENCER, M. O. *v.* PITCHER, W. S., 337
 SPERBER, H. *v.* NARKIS, N., 262
 SPINELLI, L., Clastic formation, *Apennines*, 70
 — *v.* DERIU, M., 73
 SQUAIR, H., Silver in alloys, 84
 SEZERBODLO'SKII, B. I., Voltaite, *Ukraine*, 162
 — & VDOVICHENKO, G. M., Strontium ground-waters, *Ukraine*, 119
 — & YUSHKIN, N. P., Native S, *Carpathians & Shor-Su*, 249
 SRINIVASACHARI, K. *v.* MAHADEVAN, T. M., 45

BIVASTAVA, J. K., SHENDY, G. K., & SHARMA, R. P., System $\text{Cr}_2\text{O}_3\text{-Fe}_2\text{O}_3$, 252
TAATS, G., Emission-spectrographic analysis, 5

TABBINS, R. v. LLEWELLYN, P. G., 242
TACEY, J. S., MOORE, W. J., & RUBRIGHT, R. D., Lead isotopes in galena, *Utah*, 168
STAHL, W. J., Carbon isotopes in natural gases, 205
TALDER, H. A., Liquid inclusions in quartz, *Alps*, 220
— v. JAKOB, F. E., 173
STANLEY, D. J. & MUTTI, E., Sandstone, *Alps & Apennines*, 328
STANLEY, R. J. v. MUNNS, R. G., 118
STANLEY, R. P., Quartz occurrences, *Virginia*, 163
— Quartz crystals, *North Carolina & Virginia*, 163
— Garnets, *North Carolina*, 338
STANTON, R. L. & RAPTER, T. A., Sulphur isotopes in ores, 291
STANZIONE, D. v. SCHIRILLO, A., 240
STAPLES, L. W., EVANS, H. T., Jr., & LINDSAY, J. R., Cavansite, *Oregon*, 129
STARKEY, H. C. v. SHEPARD, A. O., 52
STARKEY, J., Plagioclase feldspars, 51
STASOVA, O. F. v. KONTOROVICH, A. E., 116
STAVROV, O. D., IOVCHEVA, E. I., & ZLOBIN, B. I., Beryllium in granitoids, *Tien-Shan*, 199
STECK, A., Granitic mass, *Aar*, 231
STECLACI, L. v. PETRULIAN, N., 57, 186, 222
STEEL, B. C. H. v. ALCOCK, C. B., 24
STEFANON, A., Sandstone, *Adriatic Sea*, 242
STEIGER, R. H. v. HART, S. R., 261
STEINBERG, M., VERNHET, S., & RIVIÈRE, A., X-ray diffraction by colloidal hydroxides, 262
STEINBERGER, I. T. v. BRAFMAN, O., 181; MARDIX, S., 181
STEINHIG, G., Layered chalk, *Rugen*, 243
STEINNES, E. v. BRUNFELT, A. O., 86, 259; JOHANSEN, O., 86, 172
STEMMLER, R. S. v. GRAF, D. L., 182
STEMPROK, M. v. JANECKA, J., 188
STEPAREWSKI, M., Determination of Sr, 86
STEPHENSON, N. C. v. BAYLISS, P., 270
STERN, T. W. v. KARAKIDA, Y., 82
STERN, W. B., Determination of alkali metals & F, 260
STEVAUX, J., Clay minerals, trace elements, *Queensland*, 37
STEVEN, T. A. v. RATTÉ, J. C., 69
STEVENS, R. E. v. JACKSON, E. D., 4
STEVENSON, I. P. v. YOUNG, B. R., 307
STEWART, D. B., System $\text{CaAl}_2\text{Si}_2\text{O}_8\text{-SiO}_2\text{-H}_2\text{O}$, 29
— v. WRIGHT, T. L., 308
STEWART, F. H. v. O'HARA, M. J., 60
STEWART, G. H., Ceramics, (3), book, 88
STEYN, J. G. D. & WATSON, M. D., Norselite, *S.-W. Africa*, 312
STILLMAN, C. J. v. DREYSALL, A. R., 220
STIPP, J. J., CHAPPELL, J. M. A., & McDougall, I., Age of basalts, *New Zealand*, 256
— — — Correction, 256
— v. EWART, A., 325
STJOPIN, I. G., Hydrodynamics & oil exploration, 189
STOCH, L., Interpretation of d.t.a., 10
STÖCKELOVÁ, J. & LEŽÁL, D., Single crystals of arsenides, 104
STOLL, E. v. DACHS, H., 271
STOLYAROV, YU. M., Formation of anhydrite, *Urals*, 291
STOLYAROVA, T. I. v. SKOROBOGATOVA, N. V., 226
STONE, A. J. v. BANCROFT, G. M., 177
STOPPEL, D. v. GUNDLACH, H., 280
STORETVEIT, K. M., Palaeomagnetism of dyke, *Norway*, 166
STØRR, M., Granodioritic kaolin, *Lusatia*, 175
STOVIČKOVÁ, N. v. PALIVCOVÁ, M., 332
STOYANOVA, T., Analysis by, 48
STRAATEN, L. M. J. U. VAN, Solution of aragonite in core, *Adriatic Sea*, 241
STRANGWAY, D. v. OZIMA, M., 168
STRANGWAY, D. W. v. LARSON, E. E., 60
STREMPROK, M., Tin-tungsten ores, *Erzgebirge*, 276
STRENS, R. G. J., Polymorphism, 32
— Al_2SiO_5 solid solutions, 194
— Fréhnié stability field, 195
STREŠKO, V. v. MAKOVICKÝ, E., 313
STRICKLAND-CONSTABLE, R. F., Crystallization, condensation, evaporation, (book), 88
STRIMER, P. v. PLENDL, J. N., 76
STRIZHOV, V. P. v. ARTEMOV, YU. M., 202
STRŽEL, G., Manganese ores, *Germany*, 280
STRUILLOU, R., Iron in feldspars, 199
— Waters in contact with feldspar, 205
STRUNZ, H. & TENNYSON, C., Schauriteite, *S.-W. Africa*, 130
STUDIER, M. H., HAYATSU, R., & ANDERS, E., Organic matter in early solar system, (I), 212
— v. HAYATSU, R., 213
STUEBER, A. M., HUANG, W. H., & JOHNS, W. D., Chlorine, fluorine in ultramafic rocks, 200
— v. MURTHY, V. R., 228
STUIVER, M., Sulphur cycle in lake, *Connecticut*, 118
STUPAKOV, G. P. v. BALITSKÝ, V. S., 138
STURT, B. A., MILLER, J. A., & FITCH, F. J., Age of alkaline rocks, *Norway*, 2
SUBBARAYUDU, G. V. v. SADASHIVIAH, M. S., 322
ŠUCHMAN, B. v. CUCHÝ, Z., 104
SUDA, K. v. HAMAGUCHI, H., 259
SUENO, S. v. SADANAGA, R., 269
SUGITANI, Y., NAGASHIMA, K., & FUJIWARA, S., Water of crystallization in beryl, 94
SUGIURA, S. & NAKANO H., Fireclay, *Ishikawa*, 91
— OYA, I., & NAKAYAMA, H., Röseki ores, *Ishikawa*, 92
SUSHI, R. W., Manganese minerals, *Arkansas*, 338
SUHR, N. H. & INGAMMELLS, C.O., Analysis of silicates, 85
— v. INGAMMELLS, C.O., 32
SUKHANOV, V. A. v. BOGDANOV, YU. B., 149
SUKHANOVA, S. M. v. MANULOVNA, N. S., 8
SUKHAREV, G. M., VLASOVA, S. P., & TARANUKHA, YU. K., Thermal properties of rocks, *Caucasia*, 336
SUKHESWALA, R. N. & SETHNA, S. F., Giant pseudoleucites, *India*, 236
— & UDAS, G. R., Fluorspar mineralization, *Gujarat*, 22
— v. NORLE, D. C., 322
SUKHORSKIY, R. F., Formation temperatures of quartz, *Aldan*, 309
SUKHOV, L. G. v. ANASTASENKO, G. F., 150
SUMI, K. v. KATADA, M., 137
SUN, S.-C., CHAO, T., HIRSCH, W., & FREED, B. A., Alumina extraction from clays, *Pennsylvania*, 189
SUNAGAWA, I., Crystal growth in hematite, 160
— v. ENDO, Y., 334
SUNDIUS, N., PARWEL, A., & RAJANDI, B., Minerals in Ag mine, *Hälfors*, 100
— — — Carbonates, *Sweden*, 143
SUPERCEANU, C., Fluorite-baryte ores, *Banat*, 280
SUPERCEANU, C. I., Geosynclinal ore deposits, *Romania*, 97
SUPERNAW, I. R. v. NOAKES, J. E., 201
SUPRYCHEV, V. A. & MAKAROV, N. N., Epidote, *Crimea*, 304
— v. BAYRAKOV, V. V., 306; GRIVAKOV, A. G., 221
SURKOV, YU. A. v. VINOGRADOV, A. P., 254
SUSHCHEVSKAYA, T. M., BARSUKOV, V. L., & TRUSKOVA, T. A., Inclusions in Sn ores, *Miao-Ch'iang*, 20
SÜSSE, P., Malachite, 181
SUTHERLAND, F. L., Basaltic rocks, *Tasmania*, 151
SUTHERLAND, J. K., Chlorites, *New Brunswick*, 49
SUTOR, D. J., Newberryite in urinary calculi, 313
SUWA, K., Fayalite, *Mie*, 131
— Muscovite in pegmatite, *Japan*, 136
SUWA, Y. & NODA, T., Aluminium coordination in silicates, 93
SUWALSKI, G. & VOLLSTÄDT, H., Titanomagnetics, 223
SUZUKI, J., Röseki, *Japan*, (4), 92
SUZUKI, M. & MATSUO, S., Nickel in meteorites, 301
SUZUKI, T., Flotability of pyrite, 103
— v. SAWAMURA, T., 140
SVADKOVSKAYA, L. N. v. KOZLOV, V. D., 219
SVENSSON, N. B., Astrobleme, *Sweden*, 216
SVESHNIKOVA, E. V. v. PETERSIL'YE, I. A., 298
SVESHNIKOVA, O. L. & RAKCHEYEV, A. D., Owyheeite, *Transbaikal*, 310
SVETOV, A. P. v. SOKOLEV, V. A., 321
SVIRIDENKO, L. P., Rapakivi granites, *Salmi*, 323
SVOBODA, E. v. HAFTMAN, Z., 104
SWARTHOUT, D. G. v. WIEDERSICH, H., 141
SWEET, J. M., Robert Jameson's Journal, 338
— & WATERSTON, C. D., Papers by Jameson, 314
SWINDALE, L. D., Volcanic ash soils, 264
SWINK, L. N. & CARPENTER, G. B., Lattice dimension measurements, 169
SYCHEV, M. M., KORNEV, V. I., & KHASHOVSKAYA, A. P., Solid solutions in tricalcium silicate, 8
— KUCHKINA, E. S., & ASTAKHOVA, M. A., Kinetics in solid phase, 8
SYERS, J. K. v. ROTH, C. B., 262
SÝKORA, V., Needle-shaped $\gamma\text{-Fe}_2\text{O}_3$, 104
SYLVESTER-BRADLEY, P. C. v. MCKELLAR, J. B., 299
SYONO, Y., Magnetic properties of magnetite- ulvöspinel minerals, 162
— v. AHNRENS, T. J., 194; KUSHIRO, I., 195; MATSUL, Y., 286
SYRITSO, L. F. & CHERNIK, L. N., Accessory minerals in granites, *Transbaikal*, 55
SZABO, B. J., Radium in plankton & seawater, *Bahamas*, 41
SZÁDECZKY-KARDÖSS, E., Clay minerals, *Hungary*, 176
— Evolution of continental structures, 316
— Igneous rock textures, 316
— Map showing crustal evolution, 338
— Geological evolution, *SE Europe*, 339
— BUBICS, I., JUHÁSZ, A., OBÁVECZ, J., PANTÓ, G., & SZEPESHÁZI, K., Metamorphic rocks, *Hungary*, 333
— JUHÁSZ, A., SZÉKY-FUX, V., PANTÓ, G., & SZEPESHÁZI, K., So-called ophiolites, *Hungary*, 319
— PANTÓ, G., PÓKA, T., PANTÓ, G., SZÉKY-FUX, V., KISS, J., & KUBOVICS, I., Volcanism, *Hungary*, 319
SZALAY, S. & SÁMONI, Z., Uranium leaching from magmatic rocks, 297

SZÁNTÓ, F., GILDE-FARKAS, M., VÁRKANYI, B., & BALÁZS, J., Reaction of bentonite with Na_2CO_3 , 176

SZE, YIU-TUNG, Occurrence of pyrochlore, 150

SZÉKÝ-FUX, V., Clay minerals, *Hungary*, 176

— v. SZÁDECZKY-KARDOSS, E., 319

SZEPESHÁZY, K. v. SZÁDECZKY-KARDOSS, E., 319, 333

SZPILA, K., Phosphate in basalts, *Silesia*, 78

SZTRÓKAY, K., Evolution of stony meteorites, 300

— TOLNAY, V., & FÖLDVÁRI-VOGL, M., Kaba meteorite, 299

SZWAJA, A. v. GÖRLICH, E., 71

TADDEUCCI, A., Glauconite & coprolite pellets, *Italy*, 37

TADKOD, M. A. G. v. SADASHIVAAH, M. S., 305

TAGEYEEVA, N. V., Water in sediments, *Arctic Ocean*, 204

TAGUCHI, I. v. KAMMORI, O., 85

TAJDEE, M. & RAFFAELLI, P., Altered porphyrite-keratophyre, *Bosnia*, 158, 232

TAKABATAKE, T. & IIJIMA, S., Chromite ores, 275

TAKAGI, H. v. HAYASHI, H., 109

TAKAGI, J. v. TANAKA, S., 289

TAKAHASHI, H., Classification of fireclay, *Japan*, 89

— v. SHIRAKI, T., 113

TAKANO, Y. & NISHIDA, T., Aragonite twinning, 334

— v. MINATO, H., 130

TAKÁTS, T., Heat changes in clays, *Hungary*, 176

TAKEDE, H., Lithium fluorophlogopite, 178

— & DONNAY, J. D. H., Trioctahedral one-layer micas, (III), 178

— — & APPLEMAN, D. E., Djurleite twinning, 270

— — ROSEBOOM, E. H., & APPLEMAN, D. E., Structure of djurleite, 270

TAKEHISA, H., Composition of volcanic rocks, 83

TAKEMATSU, N., MATSUO, S., & SATO, S., Magnesium isotopes in upper mantle, 298

TAKEUCHI, Y. & JOSWIG, W., Structure of haradaite, 268

— & SADANAGA, R., Brittle micas, (I), 95

TAKEYAMA, S. v. MAEDA, F., 86

TAKIMOTO, K., MINATO, T., & HIRONO, S., Minor elements in pyrite, *Japan*, 140

TALAPATRA, A. K., Epidote crystals, *Bihar*, 46

TALBOT, J. L. v. RALEIGH, C. B., 24

TAMAIN, G., Ancient mine workings, *Spain*, 271

TAMBAYEV, A. S. v. SKRIPCHENKO, N. S., 113

TAMBURRINI, D. v. URAS, I., 170

TAMHANE, A. S. v. PRICE, P. B., 211

TAN, W. C. & VAN LANDINGHAM, S. L., Orgueil meteorite, 301

TANAKA, S., SAKAMOTO, K., TAKAGI, J., & TSUCHIMOTO, M., Cosmic-ray induced aluminium-26, 289

TANAKA, T. v. IIDA, C., 259

TANEDA, S. v. KUNO, H., 153

TANGUY, J.-C., Recent lavas, *Etna*, 61, 318

TANIDA, K., Analysis by, 56

— v. NAMBU, M., 132, 134, 141; OKADA, K., 56

TANNER, J. T. & EHMANN, W. D., Antimony in meteorites, tektites, rocks, 207

— v. EHMANN, W. D., 207

TARANUKHA, YU. K. v. SUKHAREV, G. M., 336

TARASOV, A. V. v. LEBEDEV, V. I., 33

TARASOV, V. A., Pyroxenes, garnets from skarns, *Kurusay*, 47

TARJÁN, I. v. VOSZKA, R., 24

TARLING, D. H., SANVER, M., & HUTCHINGS, A. M. J., Palaeomagnetism, *South Arabia*, 337

TARNOVSKYI, G. N. v. MOGAREVSKYI, V. V., 312

TATAR, Y. v. BURRI, C., 322

TATARSKYI, V. B., Preobrazhenskite, 56

— & CHERNYSHOVA, V. F., Refractive indices of quartz, 309

TATE, I. v. DAIMON, N., 110

TATEKAWA, M., Manganese in biotites, (I), 87

— Manganese, iron in biotites, 114

— v. UEDA, T., 95, 138

TATLOCK, D. B. v. WONES, D. R., 65

TATSUMI, T., Sulphur isotopes in sulphides, *Japan*, 33

TAUBENECK, W. H., Tonalites, *Oregon*, 236

TAUBERT, P. v. RÖSLER, H. J., 154

TAXER, K. J. & BUERG, M. J., Structure of rhodizite, 269

— v. BUERG, M. J., 180

TAYLOR, A. M., Synthetic Co beryl, 31

— v. FLANIGEN, E. M., 31

TAYLOR, C. M. & RADTKE, A. S., Nolanite, *Western Australia*, 55

— v. RADTKE, A. S., 126

TAYLOR, D., Thermal expansion of sodalite minerals, 220

— v. RILEY, J. P., 171

TAYLOR, G. H. v. KISCH, H. J., 71

TAYLOR, H. F. W. v. GAY, P., 260; INGRAM, L., 95

TAYLOR, H. P., Jr., Zoned ultramafic complexes, *Alaska*, 227

— Ultramafic rocks & meteorites, 228

— v. EPSTEIN, S., 87; O'NEIL, J. R., 110

TAYLOR, J., Partially liquid oxide systems, 24

TAYLOR, J. C. v. CHAMPION, K. P., 86

TAYLOR, J. D. v. KENNEDY, W. J., 339

TAYLOR, R. E. v. MATTOX, R. B., 261

TAYLOR, R. K. & SPEARS, D. A., Carbonate horizon, *Pennines*, 202

TAYLOR, S. R., Impact glasses, 302

— ERLANK, A. J., & GURNEY, J. J., K/Rb in australites, 303

— v. HEIER, K. S., 50

TAZZOLI, V. v. CANNILLO, E., 267

TCHALENKO, J. S. v. MORGENSEN, N. R., 174

TEIS, R. V. v. NAYDIN, D. P., 206

TEISSEYRE, J., Hornblende peridotite, *Janowice Wielkie*, 63

TEKIZ, Y. & LEYGRAND, C., Anatase-rutile transformation, 191

TELESHOVA, R. L., Analysis by, 264

— v. DORFMAN, M. D., 218

TEMPERLEY, B. N., Thermal springs, *Natal*, 205

— Mesocratic 'diabase', *Pilanesberg*, 239

TEMPIER, P., Granites, *Massif Central*, 230

TEMPLE, A. K. & GROGAN, R. M., Alkaline rocks, *Colorado*, 96

TENGINKAI, S. G. v. SADASHIVAAH, M. S., 46

TENNANT, W. C. & FELLOWS, S. K., Determination of rare-earths, 5

TENNYSON, C. v. STRUNZ, H., 130

TEODOROVICH, G. I., KOTEL'NIKOV, D. D., & MAMEDOV, A. A., Montmorillonite-hydromica formation, *Azerbaijan*, 264

TEPLITSKAYA, T. A. v. FLOROVSKAYA, N. V., 220

TERLECKY, P. M., Clay minerals, *North Carolina-Bermuda Rise*, 12

TETTENHORST, R. v. BIRLE, J. D., 178

TEX, E. DEN & FLOOR, P., Blastomylonitic & polymetamorphic belt, *Galicia*, 247

TEXTORIS, D. A. v. CAROZZI, A. V., 88

THADEU, D., Geotechnical classification of rocks, 60

THAEMLITZ, D., Analysis by, 65

THAYER, T. P., Alpine intrusive complexe, 228

THIÉBAUT, J. & ROSSY, M., Migmatite *Nolay*, 331

— v. RIOTTE, C., 231

THIEL, R. v. PUYO, M., 171

THIÉRGÄRTNER, H., Mathematical analysis in geochemistry, 290

THODE, H. G. v. GROSS, W. H., 33; KEMI A. L. W., 117

THOMAS, H. H. v. PHILPOTTS, J. A., 35; SCHNETZLER, C. C., 214; ZARTMAN, R. E., 256

THOMAS, J. M. v. ROSCOE, C., 160

THOMAS, W. B., Rare minerals, *New Jersey*, 79

THOMPSON, H. E., Limonite pseudomorph, 2

THOMPSON, J. B., Jr., Thermodynamics of solutions, 87

THOMPSON, J. E. v. DALLWITZ, W. B., 134

THOMPSON, T. D., WENTWORTH, S. A., & BRINDLEY, G. W., Expanded phlogopite, 11

THORARINSSON, S., *Surtsey*, (book), 239

— Volcanism, *Iceland*, 326

THOREZ, J. & VAN LECKWILCK, W., Weathering of shales, *Belgium*, 174

— Clay from solution sink, *Belgium*, 175

THORNE, R. L. v. GORDON, J. E., 118

THROWER, P. A., Dislocation loops in graphite, 249

THIE, T. T. v. PARKS, G. A., 42

TIKHONOV, B. A. v. KLYMENKO, Z. G., 8

TIKHONOV, V. A., BEREZHNENKO, E. T., & KOVBAK, T. T., Hydration of hexacalcium alumoniferite, 8

TILLEY, C. E. & LONG, J. V. P., Porphyroclast minerals, *St. Paul's Rocks*, 67

— & MUIR, I. D., Tholeiite, 58

TILLING, R. I. v. DOE, B. R., 50

TILTON, G. R. v. HART, S. R., 261

WETHERILL, G. W., 87

TIMASHEV, V. V. & AL'BATS, B. S., Clinker grains, 9

— v. BUTT, YU., M., 9

TINKER, P. B. H. & BOLTON, J., Sodium exchange in soils, *British Isles*, 91

TIPIPE, A. v. BRILL, R., 269

TITAYEVA, N. A., Age of organic sediments, *Siberia*, 38

TOBAILEM, J. v. NORDEMANN, D., 123

YOKOYAMA, Y., 241

TOCHILIN, M. S. v. Ruzhitskiy, V. O., 149

TODA, N., Sintering of MgO , 105

TOEWE, E. C., Geology, *Virginia*, 151

TOGARI, K., Dolomite crystals, *Hokkaido*, 143

— Colour of sphalerites, *Japan*, 336

— & KIKUCHI, T., Antigorite, *Hokkaido*, 163

TOGLIATTI, V., Age-determination by fission track counting, 256

TOKONAMI, M., Silicon carbide, 96

TOLANSKY, S., Graphitized diamond, *Pretoria*, 222

TOLLON, F. & ORLIAC, M., Au-bearing sandstones, *Aude*, 278

TOLMACHEV, G. P. v. VOLKONSKIY, B. V., 8

TOLNAY, V. v. SZTRÓKAY, K., 299

TOLOSTIKHIN, I. N. v. GERLING, E. K., 167

SKUKOLYUKOV, YU. A., 3, 41

Tomida, Y. v. FUNASAKA, W., 86

Tomita, K., Oxyhornblende, *Nagano*, 94

— Oxyhornblende, 110

— v. UEDA, T., 94

Tomita, T. v. KARAKIDA, Y., 82

OMSON, I. N., POLYAKOVA, O. P., KONSTANTINOV, R. M., & ESKOV, A. D., Lead isotopes in ores, *Transbaikal*, 33

OMURA, K. v. HAMAGUCHI, H., 259

ONG, WU v. OYANG, CHI-YUAN, 125

ONKIN, P. J., Pumice, *New Zealand*, 327

— v. LAWRENCE, L. J., 223

ONOSAKI, Y. & NAKATA, S., Andalusite, cordierite, *Hokkaido*, 45

OMS, J. S., ELLIOTT, I., & MATHER, A. L. Molybdenum dispersion, *Sierra Leone*, 112

ORII, Y. v. HAYASHI, H., 109

ORMOSOVA, G. F. v. POKROVSKIX, P. V., 144

OROPOV, N. A. & GALAKHOV, F. YA., System Al_2O_3 , 7

— v. BOIKOVA, A. I., 8; Bondar', I. A., 8

TORE DE ASSUNÇÃO, C. F. v. MACHADO, F., 61

TOTANI, M. v. MATSUI, T., 90

TOUBES, R. O., LATORRE, C. O., & LARUMBE, F., Meta-autunite, *Argentina*, 313

TOURAY, J.-C., LANTELME, F., & VOGLER, M., Analysis of fluid inclusions, 290

— v. YAJIMA, J., 138

TOURENQ, J., Thorite in sands, *Arve valley*, 70

TOURET, H., Fayalite-bearing mangerite, *Norway*, 316

TOURET, J., Augen gneiss, *Norway*, (II), 50

— Section through Precambrian rocks, *Norway*, 157

— Ribbon-gneiss, *Norway*, 331

TOWNSEND, M. G., Colour in sapphire, 223

TOYOGUCHI, T. & SHIMIZU, H., Determination of Au, 259

TOZER, D. C. & WILSON, J., Electrical conductivity of Moon, 254

TRaversa, G., Lavas, *Sardinia*, (II), 61

TRDLIČKA, Z. & COUFAL, J., Crystallization temperature of calcites, *Příbram*, 57

TREAGUS, J. E. v. POWELL, D., 67

TREHAN, J. C., Analysis by, 137

TREIBER, I., Iron ores, *Harghita*, 17

TRESVYATSKIÍ, S. G. v. YAMAK, O. F., 9; YAREMENKO, Z. A., 8

TRETJAKOW, J. D. v. HOHMANN, H. H., 15

TREVES, S. B., Volcanic rocks, *Antarctica*, 323

TRIAT, J.-M., Granite massif, *Var*, 317

TRICHET, J., Grit sheet on beach, *Moorea*, 240

— v. BELLAIR, P., 71

TRIGUNAYAT, G. C., Origin of dislocations, 24

TRNKA, J. v. BOHUN, A., 104

TROFIMOV, A. S. v. LEBEDEV, A. P., 22

TROITSKY, V. S., Thermal radiation of lunar & planetary surfaces, 254

TROMMDSORFF, V. v. WENK, E., 51, 220

TROMPETTE, R. & JOULLIA, F., Glomerular analcimolites, *Mauritania*, 329

TRONEVA, N. V. v. GENKIN, A. D., 225

TROSHIN, YU. P., Zoning of trace elements, 112

TROUT, G. J. v. ELLISTON, P. R., 252

TRUKHACHEVA, V. A. & MALAKHOV, V. V., Analysis of garnets, 4

TRÜMPY, R. v. LOMBARD, A., 173

TRUSIKOVA, T. A. v. SUSHCHEVSKAYA, T. M., 20

TSAI, Tzu-HWANG & LU, SIU-WEN, Rock permeability, 161

TSINOBER, L. I. v. GORDIENKO, L. A., 104

TSITKO, V. F. v. ZHUNINA, L. A., 9

TSUCHIMOTO, M. v. TANAKA, S., 289

TSUJI, S., Co-existing plagioclase feldspars, *Kyushu*, 138

TSUKAHARA, N. Dioctahedral chlorite, *Japan*, 307

TSURUTA, K. v. SAWAMURA, T., 140

TSUSUE, A., Magnesian kutnahorite, *Japan*, 312

TSVETKOV, A. I., Technical mineralogy, 7th Conference, 7

TSVÍK, S. M., Analysis by, 137

TSYNNINA, V. M. v. KARYAKIN, L. I., 191

TUFAR, W., Copper mineralization, *Norway*, 183

— Copper ores, *Austria*, 184

— Accessory minerals in metamorphic rocks, *Styria*, 338

— v. OTTEMANN, J., 337

TUGARDINOV, A. I. & D'YACHKOVA, I. B., Selenium in rocks, *Krivoy Rog*, 40

TULLOCH, W. v. LUMSDEN, G. I., 88

TURANSKAIA, N. V. v. BALASHOV, YU. A., 116

TURCO, G. v. BAUMER, A., 26

TURCOTTE, D. L. v. OXBURGH, E. R., 339

TUREKIAN, K. K., Deposition of Ba, Co, Ag, *Atlantic Ocean*, 293

— v. KHARKAR, D. P., 204

TURESEBEKOC, A. v. BADALOV, S. T., 99

TURNER, R. C., & BRYDON, J. E., Removal of aluminium hydroxide from montmorillonite, 262

TURNER, W. H., Iron in silicates, 76

TURNOCK, A. C., System Fe-Ta-O, 191

TUROVSKÍ, S. D., KIM, V. F., & IL'INSKAYA, G. G., Colloidal malacite, 45

TUTTLE, O. F. v. GIBBON, D. L., 29

TUZOVA, T. V. v. CHALOV, P. I., 169

TVRZNÍK, B. & BELŠÁNOVÁ, A., Mineralogy, geology, *Czechoslovakia*, (bibliography), 173

TYLER, R. C., Analyses by, 215

TYRELL, M. E. v. JOHNSON, S. S., 93

TYRWHITT, D. S. & KOEN, G. M., Sands, *Tanganyika*, 244

UCHAMEYSHVILI, N. E., MALININ, S. D., & KHITAROV, N. I., Baryte solubility in chloride solutions, 107

UCHYTILOVÁ, A. v. CUCHÝ, Z., 104

UDA, M. v. NAKAHIRA, M., 266

UDAGAWA, S. & SHIRAKI, Y., Cristobalite from kaolinite, 179

UDAS, G. R. v. SUKHESWALA, R. N., 22

UDINTSEV, G. B. & CHERNYSHEVA, V. I., Upper mantle rocks, *Indian Ocean*, 321

UDODOV, YU. N. v. ANFILOV, V. N., 26

UDRESCU, C. v. GIUŞCĂ, D., 199

UDUBASA, G. G. v. CIOFLICA, G., 319

UEDA, T. & TATEKAWA, M., Polyhalite, 95

— Soda-lime, 95

— Anorthite in lava flow, *Sendai*, 138

— & TOMITA, K., Amphibole, *Japan*, 94

UEDA, Y. v. KAWANO, Y., 82

ÜLKÜ, D., Ferberite, 271

ULMER, G. C. & WHITE, W. B., Chromous ion in spinels, 25

ULRYCH, T. J., BURGER, A., & NICOLAYSEN, L. O., Least radiogenic terrestrial Pb, 255

UMEGAKI, Y. & IISHI, K., Infrared absorption in microcline, *Japan*, 336

— & OGAWA, T., Zeolite, *Japan*, 338

— v. IISHI, K., 335

UNGAROTTI, L. v. DAL NEGRO, A., 267

UNWIN, D. J. v. BROWN, M. J. F., 1

UPTON, B. G. J., Alkaline pyroxenites, 228

— & WADSWORTH, W. J., Basalt-mugearite sill, *Reunion*, 148

URANOV, O. V., Analysis by, 129

URAS, I. & TAMBURRINI, D., Calculation of sedimentological parameters, 170

URASHIMA, Y., α -Cristobalite, *Hokkaido*, 163

URBAN, H., Hexagonal galena crystals, *Cartagena*, 222

UREY, H. C., Ranger pictures of moon, 254

— Water on moon, 254

URUSOV, V. S. & SHCHERBINA, V. V., Titanates, 25

— v. YAROSHEVSKIX, A. A., 32

URUSOVSKAJA, A. A. v. PEŘINOVÁ, M., 249

USDOWSKI, H.-E., Dolomite in sediments, 9

USTINOV, V. I. v. ARTEMOV, YU. M., 202

— MILLER, Y. M., 38

VACHETTE, M. v. PIBOULE, M., 167

VADÁZ, E., Columnar structure of basalts, *Romania & Hungary*, 237

VAES, J. F., Metamorphism of sediments, *Katanga*, 329

VAGH, A. S. v. JOSHI, M. S., 75, 160

— A. R., 28, 335

VAGLIASINDI, G. v. COCCO, G., 269

VAJNER, V. v. JENČEK, V., 332

VAKHRUSHEV, V. A., Accessory minerals in granite, *Gorny Altai*, 233

— & DOROSH, V. M., Selenium, tellurium in sulphides, *Altai-Sayan*, 183

VALTER, A. A. & GUROVA, E. P., Fluorite from sandstone, *Dniester*, 144

VALYASHKO, M. G. & VLAZHOVA, E. V., Boron in aqueous solution, 32

VANCHÉ, R., Geology, *Taurus*, 272

VAND, V. v. JOHNSON, G. G., 214

— J. N., 250

VANDERSTAPPEN, R. & VERBEEK, T., Analcite in sediments, *Congo*, 329

VAN DIVER, B. B., Contemporaneous faulting-metamorphism, *Washington*, 65

VANĚČEK, M. v. LEGIERSKI, J., 183

VAN LANDINGHAM, S. L. v. TAN, W. C., 301

VAN LECKWIJCK, W. v. THOREZ, J., 174

VAN LOON, J. C., Determination of Fe, Al, 170

VAN NESS, G. P., Geological implications of anthrax, 207

VAN OOSTERWYCK-GASTUCHE, M. M., Plancheite, shattuckite, *Katanga*, 221

VAN OOSTERWYCK-GASTUCHE, M. C., Copper silicates, *Katanga*, 221

VAN OVEREEM, A. J. A., Cassiterite placers, *Billiton island*, 276

VAN RENSBURG, W. C. J. & CAMERON, E. N., Rotation properties of ore minerals, (II), 145

— v. CAMERON, E. N., 3

VAN SCHMUS, W. R., Mezö-Madaras chondrite, 209

— & WOOD, J. A., Classification for chondrites, 120

— v. DODD, R. T., Jr., 299

VAN SICLEN, D. C. v. MATTOX, R. B., 261

VAN TASSEL, R., Iron phosphate minerals, *Belgium*, 224

— v. GUY, B. B., 96

VAN WAMBEKE, L., Radioactivity of pegmatites, *Rwanda & Congo*, 322

— v. SAFIANNIKOFF, A., 322

VARET, J., Size of minerals in rocks, 257

— v. BROUSSE, R., 156, 317

VARJÚ, G. v. NEMECZ, E., 176

VÁRKONYI, B. v. SZÁNTÓ, F., 176

VARLAMOV, V. P. v. MANUJOVA, N. S., 8

— RASHKOVICH, L. N., 108

VARSHAL, G. M. v. DORFMAN, M. D., 222

VASILEVSKAYA, A. E. v. GONCHAROV, YU. I., 293

VASIL'YEV, E. K. v. MOGAREVSKIY, V. V., 312

VASIL'YEV, V. I., Secondary cinnabar, *Gorny Altai*, 100

VASIL'YEV, YU. R., Microstructure of intrusion, *Noril'sk*, 238

— v. ZOLOTUKHIN, V. V., 304

VASYUTINSKIÍ, N. A. & SIDORENKO, A. P., Alteration of anosovite, 9

VATIN-PÉRIGNON, N. & GOËR DE HERVÉ, A. DE, Pegmatoids, *Cantal*, 317

— v. GOËR DE HERVÉ, A. DE, 318

VAUGHAN, P. R. v. KENNARD, M. F., 164

VÁVRA, J., Oxidation of hydrated Fe_2O_3 , 104

VDOVICHENKO, G. M. v. SREBRODOL'SKIY, B. I., 119

VDOVYKIN, G. P. v. FLORENSKIY, K. P., 42; VINOGRADOV, A. P., 44

VEEH, H. H., Uranium in sea-water, *Antarctic Ocean & Red Sea*, 118

VEEVERS, J. J. & ROBERTS, J., Breccia, beach rock, *Western Australia*, 71

VEJNAR, Z., Peridotites, serpentinites, *Český Les mts.*, 62

VELDE, B., Aluminium in biotite, phengite, chlorite, 136

— Mica schist, *Morbihan*, 216

VELDE, D., Minette sill, *Corsica*, 48

— Priderite, *Corsica*, 223

VELINSKIY, V. V., Spilite-keratophyre, *W. Sayan*, 238

VENER, R. A. v. KARAVAYEV, N. M., 295

VENKATARAMAN, C. v. SCHELLMAN, J., 161

VENKATAVARADAN, V. S. v. LAL, D., 120

VERBEEK, A. A. & SCHREINER, G. D. L., Potassium near granite contact, *South Africa*, 115

— v. SCHREINER, G. D. L., 117

VERBEEK, J. H. T. C. v. GROOT, T., 5

VERBEEK, T. v. VANDERSTAPPEN, R., 329

VERDIER, J., Charnockites, *Venezuela*, 333

VERGER, F. v. LAFOND, R., 92

VERGNOUX, A.-M., GIORDANO, J. & FOËK, M., Rutile monocrystals, 191

VERHOOGEN, J. v. GROMMÉ, C. S., 168

VERMA, P. K. v. PANDE, I. C., 137

VERMA, R., Analysis by, 48

VERNET, J. P., Attapulgite, *Switzerland*, 264

VERNINET, S. v. RIVIÈRE, A., 327; STEINBERG, M., 262

VERSCHURE, R. H., Basalt, kimberlite, 59

VERSYPYCK, G. W., Zircons of metamorphic rocks, *Pyrenees*, 315

VERTUSHKOV, G. N., SOKOLOV, YU. A., & YAKSHIN, V. J., Fe-Ti ores, *Urals*, 74

VERWOERD, W. J., Fenitized granite-pegmatites, *Transvaal*, 238

— & LANGENEGGER, O., Biology, geology, *Marion & Prince Edward islands*, 236

VESELÁ, M. v. KUTINA, J., 271

VIAENE, W. & MOREAU, J., Germanite, renierite, briartite, 191

VIALATTE, M.-T. v. DAUPHIN, J., 119

VIALETTE, Y. v. CAPDEVILA, R., 83

VIAN, R. W. v. HEINRICH, E. W., 115

VIANELLI, G., Clay minerals, *Perugia*, 12

VIELHAUER, S., Determination of K_2O , 260

VILCSEK, E. v. BEGEMANN, F., 43

VILENSKIY, A. M., Pyroxenes, *Siberia*, 217

VILLERS, G. & BUHL, R., Nickel manganite, 105

— LECERF, A., & RAULT, M., Synthetic spinels, 105

— v. LECERF, A., 191

VILLIERS, P. D. DE & HERBSTEIN, F. H., Marokite, *South Africa*, 338

VINCI, A., Sandstone, *Apennines*, 70

— Sediments, *Tyrrhenian sea*, 70

— v. DERIU, M., 12; MASSERA, B. E., 80

VINCZE, J. v. VIRÁGH, K., 272

VINK, B. W. v. SCHUILING, R. D., 105

VINKEN, R. v. GABERT, G., 20, 276

VINOGRADOV, A. P., Devrites, A. L., Dobrina, E. I., & MARKOVA, N. G., Radiocarbon ages, 3

— KROPOTOVA, O. I., ORLOV, YU. L., & GRINENKO, V. A., Carbon isotopes in diamond, carbonado, 201

— SURKOV, YU. A., CHERNOV, G. M., KIRNOV, F. F., & HAZARKINA, G. B., Lunar rock γ -radiation, 254

— VDOVKIN, G. P., KARYAKIN, A. V., & ZUBRILINA, M. Y., Novo-Urei meteorite, 44

VINOGRADOV, C., BARBU, I. Z., & HESSELMAN, A., Iron sediments, *Cluj*, 187

VINOKUROV, V. M., Isomorphism of Mn, Fe, 94

VINOT, A., Formation of gypsum, *Paris basin*, 203

VIRÁGH, K. & VINCZE, J., Formation of U ores, *Hungary*, 272

VISSEER, J. N. J., Grain size distribution, 240

VISTELLUS, A. B., Mathematical geology, (book), 9

VISWANATHAN, K. v. BAMBAUER, K., 52; LAVES, F., 51

VISWANATHIAH, M. N. v. NAIDU, P. R. J., 7

VITERBO, C. v. CALLEGARI, E., 247

VLACH, J. v. ŠÍP, V., 104

VLASOV, K. A., Rare elements, (III), 9

VLASOVA, E. V. v. VALYASHKO, M. G., 32

VLASOVA, S. P. v. SUKHAREV, G. M., 336

VLISIDIS, A. C. & SCHALLER, W. T., Shattuckite, *Arizona*, 54

VOGEL, J. C. v. LERMAN, J. C., 164

VOGEL, R., Systems including FeS , 123

VOGLER, M. v. TOURAY, J. C., 290

VOGT, P. R. & OSTENSO, N. A., Mantle convection, 253

VOIGHT, B., Photoelastic techniques, 84

VOINOV, A. S. v. BOGDANOV, YU. B., 149

VOITSEKHOVSKIY, V. N. & MOKIEVSKIY, V. A., Crystal dissolution bodies, 75

VOKES, F. M., Lead isotopes in ores, *Scandinavia*, 113

— Limnaite, *Norway*, 310

— Sulphide ores, *Norway*, 330

VOLKONSKIY, B. V., KONOVALOV, P. F., & TOLMACHEV, G. P., System $\text{CaO-SiO}_2-\text{H}_2\text{O}$, 8

VOLKOV, G. I. v. GUSEL'NIKOV, V. N., 199

VOLKOV, V. P. v. GERASIMOVSKY, V. I., 6

VOLKOVA, N. N. v. ZHEREBTSOVA, I. K., 40

VÖLLENKLE, H., WITTMANN, A., & NOWOTNY, H., Structure of $\text{Li}_2(\text{Si}_{0.25}\text{Ge}_{0.75})_2\text{O}_5$, 267

VÖLLSTÄDT, H. v. SUWALSKI, G., 223

VOLOKHOV, I. M. v. KUTOLIN, V. A., 316

VOLYNETS, O. N., KOLOSKOV, A. V., FLEROV, G. B., FRICK-KHAR, D. I., & SHILIN, N. L., Igneous rock series, *Kamchatka*, 320

— SHILIN, N. L., Sulphide ores, *Kamchatka*, 275

VOLYNETS, V. F. v. MILOVSKIY, A. V., 40

VON ENGELHARDT, W., Glass bombs, *Ries*, 214

von RAHDEN, H. V. R., Apparent fineness of Au ores, *Witwatersrand*, 277

VORMA, A. & SIIVOLA, J., Sukulaite, wodginite, *Finland*, 127

VOROB'EV, YU. K., White clinohumite, *Kugit-Lyal mines*, 44

VOROB'Yeva, K. A. v. BELEVTSYEV, YA. N., 201

VORONKOV, A. A., SHUMYATSKAYA, N. G., & PYATENKO, YU. A., Burbankite, 16

VOORTSOV, A. E. & LIN, N. G., Rubidium, lithium in granitoids, *Bugul'min*, 199

VORRES, K. S., Estimation of phase diagrams, (II), 190

VOVKRESENSKAYA, I. E. v. SLIVKO, M. M., 109

VOSTERS, M. & DEUTSCH, S., Determination of Rb , 171

VOSZKA, R., TARJÁN, I., BERKES, L., & KRAJSOVSKÝ, J., Alkali halide single crystals, 24

VOYKEVICH, G. V., PROKHOROV, V. G., & KHAYRETDINOV, I. A., Thermo-electromotive force effect, 161

VUILLEMENOT, N. v. MORRE, N., 148

VUKALOVICH, M. P. & ALTUNIN, V., Thermophysical properties of CO_2 , 283

WACHTL, Z. v. ECKSTEIN, J., 104

WACKMAN, P. H., HIRTHE, W. M., FROUNFELKER, R. E., Cohesive energy of rutile, 76

WADA, K., Soil allophane, 14

— NH_4Cl -kaolin complexes, (I, II), 90

— & YAMADA, H., Identification of kaolin minerals, 147

WADSWORTH, W. J. v. UPTON, B. G. J., 14

WAGER, L. R. & BROWN, G. M., Layered igneous rocks, (book), 173

WAGNER, R. v. FIEDLER, G., 174

WAHAB, O. A. & AFIA, M. S., Lead-zinc ore *Kutum*, 21

WAHLBERG, J. S. v. BAKER, J. H., 112

WALDRON, H. H., Ash eruptions, *Irazu volcano*, 240

WALENKA, K., Minerals in granite quarry *Black Forest*, 77

WALFORD, M. E. R. v. JONES, D. L., 337

WALKER, C. T. & DENNIS, J. G., Explosive phase transitions, 32

WALKER, G. v. GEAKE, J. E., 254

WALKER, G. P. L. v. GALE, N. H., 255

WALKER, J. W. R., Geology, *Thunder Bay*, 159

WALKER, R. M. v. FLEISCHER, R. L., 124; 208, 261

WALLIS, G. R. & KENNEDY, D. R., Sillimanite deposit, *New South Wales*, 281

WALLIS, R. H. v. GAYER, R. A., 329

WALSH, J. B. v. BRACE, W. F., 250

WALSH, J. N., Analyses by, 215

WALSH, P. S. v. LIGHTTOWERS, E. C., 251

WALTER, L. S., Tektite composition, 214

WALTON, E. K. v. DUFF, P. M. D., 88

WANG, C.-Y., Equation of state of periclase, 283

WANG, HSUI-CHANG & HSU, HSIEH-YEN, Hydromagnesite, *China*, 142

WANG, PU & LU, WAN-CHUEN, Fluorantigorite, fluochrysotile, *China*, 226

WANG, SHOU-CHANG, Ascharite & Fe-Mg borates, 144

WANG, YU-YUN, Synthesis of cassiterite, 10

WANGERSKY, P. J., NaCl in deep-sea cores, 327

— & JOENSEN, O. I., Fractionation of deep-sea cores, 117

WÄNKE, H. v. BEGEMANN, F., 43

WARD, F. N. v. BROBST, D. A., 258

WARE, N. G. v. PHILLIPS, R., 76

WARMAN, M. O. & BUDWORTH, D. W., Sintering of alumina, 25

— Sintering of alumina in vacuum, 25

WASSERBURG, G. J. v. BURNETT, D. S., 302

WASSON, J. T., Composition of Fe meteorites, 124

— Ni, Ga, Ge in meteorites, 212

— Octahedrites, *Arizona*, 301

— Classification of Fe meteorites, (I), 302

— & GOLDSTEIN, J. I., Hexahedrites, *Chiloe*, 211

— & KIMBERLIN, J., Classification of Fe meteorites, (II), 211

WATANABE, J., Gabbro-amphibolite complex, *Hokkaido*, 150

WATANABE, K. v. IMAI, N., 91

WATANABE, T. & KATO, A., Vredenburgite type intergrowth, *Japan*, 55

— v. SADANAGA, R., 96

WATERSTON, C. D. v. SWEET, J. M., 314

VATKINS, N. D. & HAGGERTY, S. E., Magnetic polarity in lavas, dykes, *Iceland*, 337

— v. BAKSI, A. K., 168

VATSON, D. v. BAYLISS, P., 163

VATSON, G. S., Statistics of orientation data, 79

VATSON, J. V. v. SABINE, P. A., 2, 168

VATSON, K. D., Kimberlite, *Arizona*, 228
— Kimberlites, *N. America*, 228

VATSON, M. D. v. STEYN, J. G. D., 312

VATTERS, W. A. v. KATZ, H. R., 66

VATTERSON, J. S. v. BRIDGWATER, D., 73

VATZNAUER, A., Tectonics & magmas, (I), (book), 229

WAUGH, B., Authigenic silica in sandstone, *Penrith*, 71

WEAVER, C. E., Illite formation in oceans, 90
— Clay minerals in sediments, 176

WEBB, A. W. & McDougall, I., Age of rocks, *Queensland*, 166

— v. RICHARDS, J. R., 2

WEBB, S. D. v. PIRKLE, E. C., 155

WEBB, W. M. & BRIGGS, L. L., Principal component analysis, 48

WEBER, C. H. v. HENDERSON, W. A., 163

WEBER, J. N., Isotopes in echinoderms, 116
— Carbon isotopes in limestones & fossils, 118

— GREER, R. T., & VAND, V., Fluorescence of serpentines, 250

— & ROY, R., Dehydroxylation of clay minerals, 174

WEBSTER, R., Synthetic garnets, 31

WEDEPOHL, K. H. v. HERMAN, A. G., 260

WEDOW, H., Jr., Rare-earth & Th ores, *Brazil*, 185

WEIBEL, M. v. BURRI, C., 322

WEIDE, B. M. VAN DER, Paraffins from marine sediments, 37

— v. BAJOR, M., 37

WEIRICK, L. J. v. GUPTA, Y. P., 192

WEISER, D. v. KVENVOLDEN, K. A., 38

WEISS, A. & AMSTUTZ, G. C., Heavy metal concentration, 275

WEISS, J., Ultrabasic rocks, *Moravia*, 62

WEISSER, D. v. GUNDLACH, H., 34

WEITZ, G. v. KAUTZ, K., 78

WEITZEL, H. v. DACHS, H., 271

WEILIN, E., Bismuth sulphosalts, *Sweden*, 143

WELLS, N., Selenium in top-soils, *New Zealand*, 13
— Selenium in soil-forming rocks, *New Zealand*, 39

WELTE, D., Evolution of crude oils, *Germany*, 205

WELTE, D. H. & EBHARDT, G., Paraffins in sediments, *Persian Gulf*, 203

WENDEL, C. A., Unusual ore assemblage, *Turkey*, 100

WENDEN, H. E. v. WINCHELL, R. E., 284

WENINGER, H., Pyrite in magnesite & talc, 57
— Magnesite-talc deposit, *Styria*, 281

WENK, E., SCHWANDER, H., & TROMMSDORFF, V., Anorthites, *Switzerland & India*, 51
— & TROMMSDORFF, V., Synthetic anorthite, 220

— v. BURRI, C., 172; JÄGER, E., 165; SCHWANDER, H., 51

WENK, H.-R. E., Triclinicity of K-feldspars, *Switzerland*, 51

WENTWORTH, S. A. v. THOMPSON, T. D., 11

WEFFE, M. v. BENZ, J.-P., 97

WERNER, M. A. v. HILL, T. P., 69

WEST, R., Expansion of clay minerals, 10

WESTCOTT, M. F. v. PARRY, L. G., 252

WESTRUM, E. F., Jr., v. HOLM J. L., 107

WETHERILL, G. W. & TILTON, G. R., Geochronology, 87
— & WILLIAMS, J. G., Asteroids as meteorite source, 298

WEY, R., LE DRED, R., & SCHOENFELDER, J., Transformation of vermiculite-biotite, 111

WHEELER, E. P., 2nd v. BOONE, G. M., 170

WHIPPLE, F. L., Meteoritic environment of Moon, 254

WHITAKER, A., Decomposition of struvite, 192

WHITE, A. D. v. ADDISON, W. E., 135, 195

WHITE, A. J. R., Granitic gneiss, *South Australia*, 74

WHITE, D. E. v. SCHOEN, R., 97; SKINNER, B. J., 296

WHITE, I. G. v. HARRIS, P. G., 228

WHITE, J. L. v. BURNS, A. F., 89; CRUZ, M., 263

WHITE, J. S., Jr., HENDERSON, E. P., & MASON, B., Weathering of meteorite, 129
— v. LEAVENS, P. B., 314

WHITE, W. A. & PARHAM, W. E., Clays, shales, *Illinois*, 175
— v. HOSKING, J. S., 175

WHITE, W. B., Iron in silicates, 76
— & KEESTER, K. L., Iron in pyroxenes, 93

ROY, R., & CRICHTON, J. M., Alexandrite effect, 31

— v. KEESTER, K. L., 265; ULMER, G. C., 25

WHITEHOUSE, J. E. v. MITCHELL, E. W. J., 77

WHITAKER, E. J. W., Element ratios in minerals, 111
— Classification of amphiboles, 218

WHITTEM, R. N. v. CHAMPION, K. P., 86

WICKERSHEIM, K. A. & BUCHANAN, R. A., Infrared spectrum of beryl, 216

WIDDOWSON, J. R. v. LOVERING, J. F., 219

WIECKOWSKI, K., Bottom deposits, *Mikolajki lake*, 154

WIEDERSICH, H., SAVAGE, J. W., MUIR, A. H., Jr., & SWARTHOUT, D. G., Delafosseite, 141
— v. MUIR, A. H., 15

WIERZCHOLOWSKI, B., Granitoids, *Sudetes*, 63
— Granitoids, marbles, *Sudetes*, 72

WIESER, T., Crystalline basement, *Carpathians*, 332
— v. BOBER, L., 39

WIKE, H. B. & MASON, B., Iron meteorites, 43
— v. MASON, B., 121

WILCOX, R. E. & IZETT, G. A., Determination of optic angle, (I), 258

WILD, R. K., EVANS, T., & LANG, A. R., Deformation of diamond, 335

WILKINS, R. W. T. & ITO, J., Synthetic talcs, 266

WILKS, E. M. v. FRANK, F. C., 335

WILLARD, R. J., Rotatable microscope slide ring holder, 169

WILLEMSE, J. & BENSCH, J. J., Xenoliths in gabbro, norite, *Transvaal*, 245

WILLIAMS, D. J. v. KERR, L. S., 269

WILLIAMS, E. v. NICHOLLS, G. D., 87

WILLIAMS, H. H. v. BILLINGS, G. K., 115

WILLIAMS, J., Minerals, *SW Scotland*, 252
— Minerals, *Dumfries & Galloway*, 252

WILLIAMS, J. G. v. WETHERILL, G. W., 298

WILLIAMS, P. J., Diamond fields, *S.-W. Africa*, 22

WILLIAMS, R. P., X-ray photographs of complex superlattices, 4

WILLIAMS, S. A. & AZEVEDO, J. DE, Austinite, *Utah*, 144

WILLIS, J. P. v. AHRENS, L. H., 117

WILSHIRE, H. G., Diabase-picrite intrusion, *New South Wales*, 64

WILSON, A. T. v. BOSWELL, C. R., 297

WILSON, C. D. V. v. MCGREGOR, D. M., 161

WILSON, J. v. TOZER, D. C., 254

WILSON, M., Gems, (book), 197

WILSON, M. J., Underclays of coalfield, *S. Wales*, 264

WILSON, R. B. & COONEY, A. M., Mundrabilla meteorite, 43

WILSON, R. C. L., Nomenclature of sediment particles, 327

WILSON, W. H. v. PESELNICK, L., 76

WIMMENAUER, W., Carbonatites, *W. Germany*, 62

WINCHELL, R. E. & WENDEN, H. E., Diaboleite, 284

WINDLEY, B. F., Anorthosites, *Greenland*, 59

WINKELMOLEN, C. J. G. v. BOLT, G. H., 263

WINTENBERGER, M. v. IMBERT, P., 95

WINTER, H. DE LA R., Composite radioactivity log, *Witwatersrand*, 186

WINTERHAGER, H. v. HUSSEIN, M. K., 189

WINTERHALTER, B. & SÜVOLA, J., Layered concretions, *Baltic Sea*, 117

WIPPERN, J., Origin of bauxite, *Anatolia*, 281

WITTMANN, A. v. VÖLLENKLE, H., 267

WOLD, A. v. MORRIS, B., 27

WOLETZ, G., Heavy minerals in sediments, *Alps*, 71

WOLF, L. A. v. FANG, J. H., 84

WOLF, M. v. RABITZ, A., 203

WOLFF, D., Pyrite ores, *Cyprus*, 274

WOLFF, R. G., Weathering of granite, *Maryland*, 12
— Weathering of glauconite, *Maryland*, 137

WOLLENBERG, H. A. & SMITH, A. R., Radio-geology in batholith, *California*, 230
— & BAILEY, E. H., Radioactivity of greywackes, *California*, 251

WOLTON, G. M. & CHASE, A. B., Synthetic fergusonites, 105
— v. CHASE, A. B., 192

WONES, D. R., Stability of phlogopite, 110

— TATLOCK, D. B., & LIMBACH, D. von, Orthoclase, microcline, *Nevada*, 65

WONG, C. & SCHUELE, D. E., Elastic constants of CaF_2 , 76

WOOD, C. W., Pegmatite, *New Jersey*, 18

WOOD, J. A., Olivine, pyroxene in chondrites, 213
— Metamorphism in chondrites, 209

— v. VAN SCHMUS, W. R., 120

WOOD, M. v. NICHOLLS, G. D., 87

WOODARD, G. D. v. COATES, R. V., 143

WOODROW, P. J., Structure of astrophyllite, *Colorado*, 178

WOOLLEY, A. R. v. HOWIE, R. A., 215

WORLEY, B. W., Jr. v. CALLOW, K. J., 278

WORLTON, T. G., BRUGGER, R. M., & BENNION, R. B., Néel temperature of Cr_2O_3 , 250

WOSINSKI, J. F., BEALL, G. H., & MACDOSELL, J. F., Devitrification of tektite glass, 44

WRIGHT, C. M., Syngenetic pyrite, *Ontario*, 279

WRIGHT, F. W. v. FRANKLIN, F. A., 215; HODGE, P. W., 215

WRIGHT, J. B., Pyrrhotite from sulphide lode, *Wakatipu*, 19
— Inclusions in basalts, *Nigeria*, 321

WRIGHT, J. E., Geology, *Shropshire*, (book), 173

WRIGHT, P. A., Tin concentrates, *Bolivia*, 187

WRIGHT, T. L., Alkali feldspar, (I), 308

— KINOSHITA, W. T., & PECK, D. L., Eruption of 1965, *Kilauea*, 327
— & STEWART, D. B., Alkali feldspar, (I), 308

WU, HSEIH-YI v. MA, CHONG-CHING, 160

WUCHER, K. v. GRÄBE, R., 243

WUENSCH, B. J. & NOWACKI, W., Structure of marrite, *Switzerland*, 270

WYCKOFF, R. W. G. & DOBERENZ, A. R., Strontium in fossil teeth & bones, 116

WYDERKO, M. & MAZANEK, E., Ca-Fe olivines, 286

WYLLIE, P. J., Ultramafic rocks, (book), 227

— Petrography of ultramafic rocks, 227

— Review of ultramafic rocks, 228

— & BIGGAR, G. M., Carbonatite systems, 25

— v. BOETTCHER, A. L., 107, 195; DAVIDSON, A., 113; FRANZ, G. W., 228; SCARFE, C. M., 29

YAALON, D. H. & KOYUMDJISKY, H., Cation exchange in soil clays, *Israel*, 262

YACE, I., Schists, *Ivory Coast*, 63

YAGI, K. v. KUNO, H., 153

YAGNICK, C. M. & MATHUR, H. B., Cation distribution in hercynite, 190

YAJIMA, J., TOURAY, J.-C., & IIYAMA, J., Fluid inclusions in albites, *Savoie*, 138

YAKHONTOV, L. K., New polyarsenite mineral, 130

YAKINA, T. N. v. OKOROKOV, S. D., 8

YAKSHIN, V. I. v. VERTUSHKOV, G. N., 74

YAKUNIN, M. I. v. NIKOLAYEV, D. S., 296

YALKOVSKY, R., Deep-sea core, *Caribbean*, 164

YAMADA, H. v. WADA, K., 174

YAMAGUCHI, G. v. KUBO, Y., 288

YAMAKI, O. F. & TRESVYATSKII, S. G., Quality control of porcelain, 9

YAMAMOTO, T., Sericitites, *Japan*, 306

— v. HENMI, K., 307

YAMASAKI, K. v. IIDA, C., 259

YAMASAKI, M. v. KUNO, H., 153

YAMASHITA, S., Weathering of biotite granite, 264

YAMAUCHI, H. & KASHIMA, N., Limestone cave, *Japan*, (4), 164

— Spherical speleothem, *Okinawa Jima*, 339

YANG, BAI-LIN v. ZENG, QING-FENG, 97

YARBROUGH, H. F. v. DAVIS, J. B., 206

YAREMENKO, Z. A., LOFATO, L. M., & TRESVYATSKII, S. G., Oxide systems, 8

YARIV, S. v. LURIE, D., 262

YARON, F. & SCHULMAN, N., Uranium in chalk, *Tiberias lake*, 257

YAROSH, P. YA. & YURIN, YU. F., Photoluminescence of sphalerite, *Urals*, 336

YAROSHCHUK, M. A. v. MEL'NIK, YU. P., 187

YAROSHEVSKYI, A. A. & URUSOV, V. S., Isomorphism, 32

— v. KIRKINSKII, V. A., 204

YE, JI-SUN, RONG, SHU-QIN, & SHI, SHU-LIN, Determination of C, 4

YEDLIN, N., Anatase, *Connecticut*, 338

YEFIMOV, A. F. = EFIMOV, A. F.

YEFREMOVA, S. V. = EFREMOVA, S. V.

YEGOROV, I. N. = EGOROV, I. N.

YELISEYEEVA, G. D. = ELISEEVA, G. D.

YEPAKTO, YU. M. = EPATKO, YU. M.

YERENBURG, A. M. = ERENBURG, A. M.

YERMAKOV, V. I. = ERMakov, V. I.

YERMAKOV, V. V. = ERMakov, V. V.

YERMOLAYEV, N. P. = ERMOLAEV, N. P.

YERMOLENKO, N. N. = ERMOLENKO, N. N.

YERSHOV, V. M. = ERSHOV, V. M.

YERSHOV, V. V. = ERSHOV, V. V.

YERSHOVA, V. G. = ERSHOVA, V. G.

YESIKOV, A. D. = ESIKOV, A. D.

YEZIKOVA, N. Z. = EVZIKOVA, N. Z.

YODER, H. S., Jr. v. O'HARA, M. J., 30

YOHE, G. R., Clays as binding materials, 175

YOHO, W. H. v. PIRKLE, E. C., 155

YOKOYAMA, Y., Aluminium isotopes in sediments, 241

— TOBAILEM, J., GRJEBINE, T., & LABEYRIE, J., Rate of sedimentation, *Indian Ocean*, 241

YONEMITSU, K. v. AOKI, M., 90

YOO, E. K., Graphite, *Korea*, 281

YORK, D., Constructing isochrons, 167

— v. BAKSI, A. K., 168

YOSHIMURA, T., HAYASHI, M., & HONISHI, O., Prehnite, nephrite, *Nagano*, 308

YOSHINAGA, N., YOTSUMOTO, H., & IBE, K., Imogolite, *Japan*, 175

YOTSUMOTO, H. v. YOSHINAGA, N., 175

YOUNG, B. R., HARRISON, R. K., SERGEANT, G. A., & STEVENSON, I. P., Glauconite, *Derbyshire*, 307

YOUNG, E. J., Composition of cores, *Pacific Ocean* & *Gulf of Mexico*, 202

YOUNG, G. M., Sedimentary structures, *Ontario*, 244

YOUNG, R. A. v. ELLIOTT, J. C., 192

YUAN, CHI-LIN, SHEI, KWANG-HONG, CHANG, FENG-LIN, & CHANG, YU-YEN, Microstructure of ultrabasic massif, 67

YUDIN, I. A. v. NOVIKOV, A. I., 9

YUGAY, T. A. v. DENISOV, S. V., 113

YUL, S., Decomposition of siderite, 27

YUKINA, L. V. v. LAVRUKHINA, A. K., 212

YUND, R. A. & KULLERUD, G., System Cu-Fe-S, 106

YURIN, YU. F. v. YAROSH, P. YA., 336

YURKINA, K. V. v. IL'IN, N. P., 56

YUR'YEV, L. D., Kaersutite in lamprophyre, *Azov*, 306

YUSHKIN, N. P., Sulphur crystals, *Uzbek SSR*, 139

— v. GOLDIN, B. A., 227; SREBRODOL'SKII, B. I., 249

YUSHKO-ZAKHAROVA, O. E. & CHERNYAEV, L. A., Palladium bismuthide, *Monchegorsk*, 226

— New Pd minerals, *Talnakh*, 226

ZADOR, S. v. ALCOCK, C. B., 24

ZADOROZHNYI, I. K. v. NAYDIN, D. P., 206

ZÄHRINGER, J., Rare gases in meteorites, 208

— v. OTTING, W., 212

ZAK, I. v. GROSS, S., 245

ZÁK, L., Molybdenite, feldspar, *Bohemia*, (II), 19

— Molybdenite, feldspar, *Bohemia*, (I), 100

ZAK, S. I. v. DUDKIN, O. B., 234

ZAMYATINA, G. M. v. SHCHERBA, G. N., 200

ZANAZZI, P. F. v. COCCO, G., 16, 271; FANFANI, L., 94, 181

ZARDINI, R. v. FYFE, W. S., 333

ZARETSKAYA, A. V. v. OTROSHCHENKO, V. D., 39

ZARETSKAYA, G. M. v. BELYAYEV, G. S., 8

ZARETSKII, P. V., Boron minerals, *Donets basin*, 56

— Mobility of minor elements, 204

ZARTMAN, R. E., BROCK, M. R., HEYL, A. V., & THOMAS, H. H., Age of intrusive rocks, *United States*, 256

ZASEDATELEVA, N. A., ZIN'KO, E. I., & MEDVEDOVSKAYA, E. I., Wollastonite rock concentrate, *Koitash*, 9

ZAYTSEV, N. S. v. BOROVSKAYA, I. S., 281

ZAYTSEVA, R. I., Analysis by, 307

ZBOŘÍLEK, A. & GALLAS, M., Silicon single crystals, 104

ZEHME, H. v. FISCHER, K., 15

ZEIL, W. & PICHLER, H., Rhyolite formation *Andes*, 325

ZELENKA, T., Glassy tuffs, 176

ZELLER, C. v. BABKINE, J., 252

ZEMANN, J., Infrared pleochroism, 336

ZEN, E-AN, Mixed-layer minerals, 14

ZENG, QING-FENG & YANG, BAI-LIN, Flow mineralizing solutions, 97

ZENIN, M. F. v. OTROSHCHENKO, V. D., 39

ZENTAI, P., Spectrographic analysis, 5

ZEZIN, R. B. v. FLOROVSKAYA, N. V., 220

ZHABIN, A. G., Calcite of magmatic origin, 5

— Alkalies in lava complexes, *Maymecha Koty*, 233

— & CHEREPIVSKAYA, G. E., Fused sandstone veins in dolerite, *Siberia*, 156

— v. ES'KOVA, E. M., 130; LAPIN, A. V., 237

ZHABANOV, E. F. v. ZHABANOV, K. I., 42

ZHABANOV, K. I. & ZHABANOV, E. F., Plant anomalies near ores, *Siberia*, 42

ZHIDANOV, YU. YA. v. INDOLEV, L. N., 219

ZHELUDEV, I. S., Piezoelectric properties of crystals, 251

ZHEREBTSOVA, I. K. & VOLKOVA, N. N., Trace elements in brines, 40

ZHIDIKOVA, A. P. v. ERMOLAYEV, N. P., 40

ZHOGINA, V. V. v. KHODAKOVSKYI, I. L., 24

ZHUNINA, L. A., SHARAI, V. N., MASURENKO, V. D., TSITKO, V. F., LUK'YANOVA, T. T. & KHRIPKOVA, N. N., Crystallization products of glasses, 9

— v. SHARAI, V. N., 8

ZIEGLER, G. v. SCHWIEHT, H. E., 10

ZIEHR, H. v. PREUSS, E., 33

ZIGAN, F. v. ROTHRAUER, R., 269

ZIL'BERMINTS, A. V., Trace elements in ores, *USSR*, 291

ZIN'KO, E. I., MEDVEDOVSKAYA, E. I., & FOMINA, N. P., Lithium aluminosilicates in ceramics, 8

— v. ZASEDATELEVA, N. A., 9

ZIRKL, E. J., Emeralds, *Habach valley*, 196

ZLATKIS, A. v. OLSON, R. J., 213

ZLOBIN, B. I. v. STAVROV, O. D., 199

ZOLOTUKHIN, V. V., Nickel in intrusions *Noril'sk*, 114

— VASIL'YEV, YU. R., & ZYUZIN, N. I., Pumpellyite, *Noril'sk*, 304

ZOLTAI, T. v. ARAKI, T., 181; JAHANBAGLOO, I. C., 268

ZORIN, E. S., KOSTENKO, I. F., & KUDENKO, A. A., Isomorphism in sphalerites, *Kazakhstan*, 310

ZUBRAKOV, V. A., Pleistocene deposits, 167

ZUBRILINA, M. Y. v. VINOGRADOV, A. P., 44

ZUL'FUGARLY, N. D., ÉFENDIEV, G. K., & LOGINOV, L. A., New Cu-Ge mineral, *USSR*, 225

ZURBUCHEN, M. & RUTISHAUSER, H., Geological map, *Lauterbrunnen*, 324

ZUSSMAN, J. v. GAY, P., 260

ZVEREV, S. M. v. NEPROCHNOV, YU. P., 145

ZYAGIN, B. B., DOLOMANOVA, E. I., SOBOLEVA, S. V., & MOLEVA, V. A., Dioctahedral mica, *Transbaikal*, 306

— & SOBOLEVA, S. V., Polytypism in molybdenite, 16

ZWART, H. J., Palaeozoic crystalline rocks *Pyrenees*, 332

— v. KALSBEK, F., 303

ZYRYANOV, V. N. v. PERCHUK, L. L., 139

ZYUZIN, N. I. v. ZOLOTUKHIN, V. V., 304

SUBJECT INDEX

to *Mineralogical Abstracts*, vol. 19. Names of REGIONS are printed in small capitals. Subjects in lower-case roman, and localities in italics.

lar v. Switzerland
berdeenshire v. Scotland
Iber-Ildut v. France
absite, South Australia, flotation, 103
absorption, in visible reflectance spectra, 58
abyssal plains, Gulf of Alaska, 236
Acacia vale, New South Wales v. Australia
Acantharia spicules, 80
accessory minerals, in extrusive rocks, 228 ; in magmatic complexes, 7 ; *Armenia*, in volcanic rocks, 7 ; *Bazum range*, in volcanic rocks, 7 ; *Buryat ASSR*, in granitoids, 7 ; *Ethiopia*, in granite, 68 ; *Gorny Altai*, ore minerals in granite, 233 ; *Rhodopes*, in pegmatite, 144 ; *Sierra Nevada*, in granitic rocks, 34 ; *Transbaikal*, in altered granite, 55 ; *Urals*, in gabbro-peridotite, 7
Acid igneous rocks, S isotopes in, 33 ; *Altai-Sayan*, alkalis in, 114 ; *Caucasus*, rare-earths, Y, Th in, 7 ; *Kii peninsula*, zoned complex, 151
Acmite, in eclogitic assemblages, 287 ; *Virginia*, 79
Acoustic thermic analysis of crystals, 104
Actinolite, Mössbauer effect, 177 ; *Crimea*, formed from anthophyllite, 306 ; *Saitama*, in amphibolite, opt., 133 ; *Skye*, anal., 60
Actinolitefels, Aar, comp., 247
Acupan mine, Philippines v. East Indies
Adam Clisi v. Romania
Adamellite, Georgia, Fe, Mg in biotite, 48 ; *North Carolina*, metamorphosed, comp., 159 ; *Queensland*, 152, 323 ; *Vogtland*, intruding phyllite, 233
Adamello v. Italy
Adelaide, South Australia v. Australia
Aden v. Arabia
Adirondack mts. v. New York
Adrar Taliouine v. Algeria
Adrasman v. USSR
Adriatic Sea v. Mediterranean Sea
Adularia, Na, K, Ba in, 42 ; structure, 269 ; *Alps*, X-ray, 15
Aegirine, *Lovozero*, homogenization temperature, 59
Aegirine-augite, Alnö, comp., opt., 47
Aeneas v. Washington
Aenigmatite, Khibiny, X-ray, 1 ; *New South Wales*, in trachyte, comp., 218 ; *Vishnevye mts.*, anal., opt., X-ray, d.t.a., 130
Aeolian islands, Sicily v. Italy
AFGHANISTAN, *Ghazni*, granites, 322 ; *Hajigak*, Fe ore, 19 ; *Kudalak*, Fe ore, 19
AFRICA, fission tracks in mica, 137 ; garnets from kimberlites, 45 ; kimberlites, 228 ; minerals from carbonatites, 36 ; monazite, 97 ; radiometric dating of pre-Silurian geology, 261 ; red clays, 13 ; Sr, Ba in carbonatites, 115 ; *Albert lake*, heavy minerals in sediments, 329 ; *Copperbelt*, pyrite, cattierite, 222 ; *Edward lake*, heavy minerals, 328 ; *El Gassi, Sahara*, age of rocks, 165
Afwillite, Israel, 245
Agate, cutting & polishing, 31
Age-determination, 1, 81, 165, 255 ; charged particle tracks, 261 ; construction of isochrons, 167 ; controlled leaching of monazite, 167 ; dispersion of birefringence, 83, 166, 167 ; effect of contact metamorphism, 261 ; fission track counting of muscovite, 256 ; inclusions in iron meteorites, 212 ; isotope dilution analysis, 255 ; K/Ar dating, 261 ; Kr, Xe in uraninites, 3 ; modern trends in isotope chronology, 83 ; of achondrites, pallasites, 300 ; of geomagnetic polarity epochs, 167 ; of meteorites, 301, 302 ; of minerals with high common Pb content, 3 ; of organic sediments by ionium method, 38 ; of peat, plant remains, 3 ; of Pleistocene, 3, 167 ; of uranium minerals, 167 ; of zircons, 261 ; Pb/Pb, U/Pb methods, 198 ; radiometric dating, book, 261 ; radiocarbon in tree rings, 164 ; radiocarbon method, 3 ; Rb/Sr method, 259 ; review of geochronology, 87 ; thermoluminescence of smoky quartz, 2 ; use of Mosimann's correlation coefficient, 258
—, Aar, 247 ; *Aeolian islands*, 326 ; *Africa*, 261 ; *Aldan*, 256 ; *Alps*, 165 ; *Antarctica*, 1, 81, 166, 323 ; *Aral Sea*, 169 ; *Arizona*, 261 ; *Australia*, 166 ; *Barbados*, 166 ; *Beillard*, 257 ; *Brazil*, 3, 166 ; *British Columbia*, 1 ; *British Isles*, 2, 168 ; *Buenos Aires*, 256 ; *California*, 168 ; *Cameroon*, 165 ; *Central African Republic*, 81 ; *Chile*, 2 ; *China*, 81 ; *Colombia*, 256 ; *Colorado*, 66, 165 ; *Dniester*, 82 ; *Dzungaria-Balkhash*, 257 ; *Finistère*, 82 ; *France*, 273 ; *Hungary*, 256 ; *Iceland*, 255 ; *Idaho*, 1 ; *India*, 2, 82 ; *Ireland*, 261 ; *Israel*, 257 ; *Japan*, 82, 136 ; *Karelia*, 3 ; *Kola*, 150 ; *Kuriles*, 82 ; *Malawi*, 165 ; *Mexico*, 244 ; *Minas Gerais*, 167, 236 ; *Montana*, 261 ; *Mont-Dore*, 82 ; *Morocco*, 81 ; *Morvan*, 318 ; *Mozambique*, 165 ; *Nepal*, 82 ; *New Guinea*, 81 ; *New Mexico*, 168 ; *New York*, 81 ; *New Zealand*, 2, 168, 256 ; *Normandy-Brittany*, 257 ; *Norway*, 2, 166 ; *Oklahoma*, 1 ; *Oregon*, 168 ; *Ottawa*, 66 ; *Pacific Ocean*, 168 ; *Papua*, 81 ; *Pennsylvania*, 81 ; *Polynesia*, 255 ; *Portugal*, 82 ; *Puy-de-Dôme*, 317 ; *Queensland*, 152 ; *Russia & Baltic Sea*, 3 ; *Sahara*, 81, 165, 255, 328 ; *St. Helena*, 168 ; *Sakhalin*, 82 ; *Sayan*, 83 ; *Scotland*, 2 ; *Shantung*, 257 ; *Siberia*, 82, 149 ; *Solomon islands*, 2 ; *Somali basin*, 165 ; *Sonoran*, 261 ; *South Africa*, 165 ; *South-West Africa*, 81 ; *Spain*, 83 ; *Spitsbergen*, 168 ; *Sweden*, 83, 324 ; *Switzerland*, 185 ; *Tahiti*, 255 ; *Tasmania*, 1 ; *Tatra mts.*, 83 ; *Taygonos peninsula*, 83 ; *Taymyr peninsula*, 149 ; *Turkey*, 166 ; *Uganda*, 246 ; *United States*, 256, 337 ; *Urals*, 3 ; *Utah*, 330 ; *Venezuela*, 255 ; *Wales*, 1 ; *Washington*, 1 ; *Western Australia*, 1 ; *Wyoming*, 261
Agglomerate, Hungary, pyroclastic, 319 ; *Spitsbergen*, 329
Aguja Helionada v. Argentina
AGV-1, comp., 32 ; Cu, Ga, Zn in, 86 ; Mg in, 5 ; Mn in, 172 ; Sb in, 259 ; V in, 85
Ahaggar v. Algeria
Aichi, Honshu v. Japan
Aiguillon bay v. France
Aikinite, structure, 270 ; *Algeria*, 18 ; *Sweden*, X-ray, 143
Ailsh, loch, Sutherland v. Scotland
Air v. Niger
Ajo v. Arizona
Akan mine, Hokkaido v. Japan
Akatani mine, Honshu v. Japan
Äkermanite, IR, 133 ; *Bushveld*, comp., 245
—, Co, Ge substitution, 195
—, gehlenite series, 133
Äkermanfels, monticellite, Bushveld, xenoliths, 245
ALABAMA, *Goshen valley*, bauxite, 22 ; *Rock Run*, bauxite, 22
Ala-Ekper range v. Turkmenian SSR
Alai (Alay) mts. v. Kirghizian SSR ; *Tadzhik SSR*
Alambek v. Uzbek SSR
Åland v. Finland
ALASKA, metalliferous lodes, 183 ; zoned ultramafic complexes, 227 ; *Cape Thompson*, radionuclides in earth materials, 112 ; *Duke island*, ultramafic complex, 227 ; *Forty Mile river*, aluminocopiapite, 143 ; *Gulf of Alaska*, abyssal plains, 236 ; *Immachuk river*, *Seward peninsula*, geology, geochemistry, 42 ; *Seward peninsula*, Sn ores, 188, Sn-W-B ore, 298
Alaskaite, Algeria, 18
Alaskite-granite, Angara, 321
Albero Bassi v. Italy
Alberta v. Canada
Albert lake v. Africa
Albite, breakdown at depth, 288 ; chessboard, 15 ; melting under pressure, 31 ; Na, K exchange, 110 ; resistivity, 252 ; synthesis, X-ray, 29 ; *Amelia*, thermodynamics of ordering, 282 ; *Dolomites*, intergrown with sanidine, 232 ; *Japan*, in schist, anal., opt., 159 ; *Lower Silesia*, in altered rocks, 320 ; *Mozambique*, comp., X-ray, 220 ; *Oklahoma*, rimming perthite, 65 ; *Savoie*, with fluid inclusions, 133
Albitite, equation of state, 250 ; *Beauvoir*, with lepidolite, 148 ; *Ulkau*, Zr in, 200 ; *Urals*, with magnetite, sphalerite, 156
Albitization, *Finistère*, of dolerite, 318 ; *Morvan*, 318 ; *Tien-Shan*, with fluorite veins, 156
Albitophyre, Urals, comp., 155
Aldan, Siberia v. Russian SFSR
Aldan shield, Siberia v. Russian SFSR
Aldingen v. Germany
Aleutian basin v. Pacific Ocean
Alexandrite, Cr in, 31
Alexandrite effect, 31
Algal reefs, as gas reservoirs, 189
ALGERIA, *Adrar Taliouine*, Fe-Cu ores, minerals, 18 ; *Ahaggar (Hoggar)*, age of rocks, 255, age of zircons, 81, Precambrian volcanic rocks, 248 ; *Anti-Atlas*, age of granites, minerals, 1 ; *Atakor*, garnet pyroxenite, 47, lacustrine deposits, 328 ; *Boukdedma*, galena, sphalerite, talc, 18 ; *Bou Soufa mine*, Cu ores, 18 ; *Cavallo*, ore-deposits, volcanic rocks, 18 ; *El Maden*, baryte, siderite, arsenopyrite, bornite, stephanite, 18 ; *Feidjet el Mouley*, spilitic lavas, 148 ; *Guettara*, bertrandite, 277 ; *Hassi Amrane*, spilitic lavas, 148 ; *Oued el Kébir*, Pb-Zn-Cu ores, 18 ; *Silet*, volcanic rocks, 321 ; *Tell Setifian*, ores, minerals, 18 ; *Yetti-Eglab*, Precambrian rocks, 321

Alite, structure, 9

Alkali elements, structure of silicate glasses, 266; *Altai-Sayan*, in acid igneous rocks, 114; *Maymecha-Kotuy*, in ultramafic rocks, 233

Alkali halides, adsorption of water vapour, 118; single crystals, 24, 104

Alkali metals, determination, 260; *Baikal*, in pegmatitic minerals, 50

Alkaline complex, *Colorado*, Nb, Ti in, 96; *Ice river*, with carbonatite, 66; *Lovozero*, geochemistry, 6; *Quebec*, mineralogy, 46; *Minas Gerais*, 236

Alkaline rocks, charged particle tracks, 261; radioactive elements in, 36; undersaturated, genesis, 30; with magmatic calcite, 57; *Armenia*, rare-earth elements in, 197; *Brent crater*, *Ontario*, 65; *Colorado*, Precambrian, 66; *Ditro*, trace elements in, 115; *Khibiny*, gases in, 119; *Kola*, 150; *Maymecha-Kotuy*, geochemistry of alkalis, 233; *New South Wales*, 64; *Norway*, age, 2; *Sayan*, age, 83; *Siberia*, hydrocarbons, bitumens in, 298; *Sweden*, genesis, comp., 324; *Turkey peninsula*, 150; *Tuva*, origin, 239; *Yakutia*, Pt group metals in, 112

Alkaline ultrabasic rocks, *Maymecha-Kotuy*, distribution patterns, 234; *Siberia*, origin, 68

Alkali valley v. Oregon

Allakh-Yun', *Siberia v. Russian SFSR*

Allanite (orthite), *Dneiper*, rare-earths in, 198; *Ibaragi*, comp., 142; *Kazakhstan*, Sc in, 53; *Kola*, rare-earths in, comp., opt., 133

Allarechensk v. Russian SFSR

Allchar v. Greece

Allevardite, *Carpathians*, formed from tuff, X-ray, 176; *Kuli-Kolon*, K-rich, anal., opt., X-ray, d.t.a., 179

Allococlase (alcocksite), *Azerbaijan*, comp., X-ray, 310

Allophane, comp., IR, structure, 14; electron microscopy, 175; *California*, anal., 51; *Japan*, in volcanic ash soils, 264, IR absorption, 90

Alluvium, *Ardeche*, 93

Almadén v. Spain

Almalyk v. Uzbek SSR

Almandine, *Moravia*, in granulite, 332; *Norway*, comp., opt., X-ray, 316; *Sudetes*, in quartzite, anal., 49; *Transbaikal*, comp., 55

—pyrope, *Mauritania*, comp., opt., X-ray, 45

Almklovdalen v. Norway

Alnö v. Sweden

Alnöite, *Alnö*, breccia with inclusions, 146, Sr, Ba in, 115

Alpine intrusive rocks, 228

Alps v. Austria; *Europe*; *Switzerland*

Alsace v. France

Alsóárdoskos quarry v. Romania

Alston, Cumberland v. England

Altai (Altay), Siberia v. Russian SFSR

Altai-Sayan, Siberia v. Russian SFSR

Altaite, *Izu peninsula*, 99; *Philippines*, 278

Altenberg v. Germany

Alto Adige v. Italy

Alto-Ligonha v. Mozambique

Aluminium, determination, 4, 5, 85, 86, 170, 171, 259; in meteorites, 207; in soil, 13; ions in chlorite, phengite, biotite, 136; X-ray fluorescence in silicates, 93; *Kazakhstan*, in quartz, 138

—compounds: Cr in oxide, 77; heats of formation of silicate polymorphs, 29; hydroxide gels, 89; modifications of phosphates, 89; polymorphism of $AlPO_4$, $AlPO_4 \cdot SiO_2$, 192; production of alumina, 8; sintering of alumina, 25; stability of Al_2SiO_5 solid solutions, 195; substitution in $Al_2Ca_3(SiO_4)_2(OH)_{2-4x}$, 267; synthesis of Al analogue of magnetoplumbite, 192

—isotopes, in marine sediments, 241; in meteorites, 209; in rocks, 289

—minerals: Al_2SiO_5 polymorphs as geological barometers, 157

Aluminocopiaite, *Alaska*, comp., opt., X-ray, 143

Aluminosilicates, conditions of formation, 24; hydration, dehydration of glass, 30; synthesis, 29

Alumo-aeschynite, *Vishnevye mts.*, anal., X-ray, 130

Alushtite, *Crimea*, structure, anal., opt., d.t.a., 268

Amagá v. Colombia

Amazon river v. Brazil

Amba v. India

Amba Dongar v. India

Amba Dongar mines v. India

Ambrì v. Italy

Amblygonite, Argentina, 281

Amderminsk v. Russian SFSR

Ameland v. Netherlands

Amelia v. Virginia

Amelia Co. v. Virginia

Amélie-les-Bains v. France

Amesite, *Hällefors*, anal., 100

Amethyst, *Gifu*, trace elements in, 138

Amherst Co. v. Virginia

Amino acids, in plankton & sediments, 38; in sediments, 37; *La Rochelle*, in marine mud, 240; *Leicester*, in bitumen, 199; *Ruhr*, in kaolinite claystone, 295

Ammonia, melting curve, 25

Ammonium, *Dagestan*, in waters of oil deposits, 205

Ammonium alum v. tschermigite

Amosite, redox potential, 288

Amphibole-garnet rocks, equilibrium in, 330

Amphibole group, Al, Fe replacing Si, Mg, 267; book, 260; classification, 79, 218; crystal-field phenomena, 177; formulae, 135; heated in air, 110; in eclogite, comp., 159; isomorphism, 94, 330; magnetism, comp., 252; metamorphic, stability, 110; pleochroic formula, 305; structural formulae, 84; synthesis, 288; *Aar*, comp., 247; *Atlantic*, in mylonite, 67; *Australia*, in metadiabase, comp., 217; *Bohemian massif*, F in, 293; *Congo*, alkali, anal., opt., 305; *Czechoslovakia*, in skarns, anal., 132; *Hocheifel*, in trachyte, 217; *Hokkaido*, calceriferous, comp., 150; *Japan*, with two lattices, anal., opt., X-ray, 94; *Norway*, Na-rich, in eclogite, 47; *Rhodesia*, hastingsitic, comp., 305; *Siberia*, from carbonatites, granitoids, comp., opt., X-ray, 306; v. also varieties, species

Amphibolite, chemical weathering, 200; mineral equilibrium, 330; silica index, 114; *Aar*, 247; *Argentina*, age, 256; *Atlantic*, magnetism, 230; *Carpathians*, radioactivity, 230; *Connecticut*, syntectonic, 74; *Hokkaido*, massif, 150; *India*, comp., 333; *Irkutsk*, with organic C, 295; *Malawi*, comp., 235; *Mauritania*, 45; *Norway*, 316; *Quebec*, O isotope equilibrium, 296; *Romania*, 248; *Sierra Leone*, comp., 234; *South Africa*, K isotopes in, 115; *Spitsbergen*, Fe group elements, 73; *Tyrol*, 247; *Venezuela*, garnetiferous, 249

—epidote, *Aar*, comp., 247

—garnet, *Saitama*, 133

Amsaga v. Mauritania

Amur, Siberia v. Russian SFSR

Amygdales, *New South Wales*, segregation vesicles, 324

Anaconda-Caribou, New Brunswick v. Canada

Analcimolite, *Mauritania*, origin, comp., 329

Analcite (analcime), altered to kaolinite, 289

identification, 259; pseudomorphing leucite, 320; *Congo*, in sedimentary rocks, 329

Crimea, anal., opt., X-ray, 221; *Gunma*, opt., d.t.a., 137; *Japan*, in metamorphic rocks, 138, in mudstone, anal., opt., X-ray, 139; *Lisbon*, in andesite, 148

Mauritania, 329; *New South Wales*, comp., 64; *Niigata*, comp., 221; *Nova Scotia*, anal., X-ray, 52; *Ontario*, in litchfieldite, 330; *Sydney basin*, in coal measures, 323; *Wyoming*, comp., X-ray, 309

Anandite, *Ceylon*, anal., 219

Anatase, stability, 105; transformation to rutile, 191; *Connecticut*, 338; *May-sur-Orne*, authigenic in sandstone, 218

Anatexite, *Argentera*, banded, comp., 248

Antatolia v. Turkey

Anchimetamorphism, 246

Ancylite, *Virginia*, 79

Andalusia v. Spain

Andalusite, heat of formation, 29; electron resonance, 94; orientation during metamorphism, 332; stability field, 194; *Hokkaido*, in hornfels, 45; *Ukraine*, anal., opt., X-ray, 303

Andes v. Chile; *Colombia*; *Peru*

Andesine, high-temp., diffraction, 195; *France*, in augen gneiss, 73

—labradorite, *Iceland*, opt., 51

Andesite, circum-Pacific types, 239; In in, 260; melting, crystallization, 287; *Antarctica*, 323; *California*, fusing granite, 329; *Cantal*, 318; *Elgin*, comp., 317; *Halle*, 233; *Hungary*, laccolith, 237, origin, 325; *Lisbon*, vesicular, 148; *Lueta-Vlahita*, altered, 17; *New Guinea*, 64; *New Zealand*, Se in, 39; *Serbia*, 319; *Taupo*, origin, comp., 325

—basalt, *Serbia*, comp., 319

—dacite, *Sayan*, distribution of elements, 292

Andesitic rocks, *Sardinia*, chemical evolution, 61

Andhra Pradesh v. India

Andosols, 264

Andradite, Mössbauer effect, 177; synthesis, 29; *Banat*, X-ray, 245

—melanite-schorlomite series, comp., opt., X-ray, IR, 215

Angara, Siberia v. Russian SFSR

Angoulême v. France

Anhydrite, identification, 259; S isotopes in, 297; world resources, 22; *Canada*, domes, 324; *Cumberland*, nodular, 242; *Durham*, 147; *Israel*, in quartz, 224; *Noril'sk*, S isotopes in, 203; *Urals*, in pyrite ore, 291

Ani mine, Honshu v. Japan

Ankaratrite, *Altı Vicinities*, 232

Ankerite, from carbonatite, comp., 36; *Pennines*, 202; *Norway*, in carbonatite, 291; *Sweden*, anal., 143

Annapolis v. Maryland

Anorthite, determination in plagioclase, 3; high-temp. diffraction, 195; synthetic, opt., 220; X-ray, 29; *Japan*, out-of-step domains, 179; *Sendai*, phenocrysts, X-ray, 138; *Switzerland & India*, comp., opt., 51

Anorthoclase, staining test, 170; *Antarctica*, age, 323; *Wakayama*, = sanidine, 137

Anorthosites, equation of state, 250; rare-earth in, 35; two types, 59; *Greenland*, origin, 59; *Niger*, 152; *Norway*, plagioclase in, 68, 219

Anosovite, oxidation, 9

TARCTICA, Mesozoic basaltic rocks, 200; monazite, 97; spherules in ice, 215; U isotopes in sea-water, 118; *Bonney lake*, trace elements in water, 297; *Cape Evans*, *Ross Island*, titanomagnetites, 223; *Cape Royds*, age of kenyte, 323; *East Ongul island*, ilmenite, 311; *Ellsworth Land*, age of igneous rocks, 166; *Fox bay*, *Falklands*, dolerite, 323; *Fryxell lake*, trace elements in water, 297; *Hoare lake*, trace elements in water, 297; *Joyce lake*, trace elements in water, 297; *Lützow-Holm Bay*, metamorphic rocks, 136; *Marguerite bay*, volcanic rocks, 323; *Melbourne mt.*, *Victoria Land*, volcanism, trachyandesite, 69; *Queen Maud Land*, age of rocks, 81; *Rennick glacier*, geology, 66; *Ross island*, volcanic rocks, 323; *Sör-Rondane*, age of rocks, minerals, 1, gneiss, 323, igneous & metamorphic rocks, 67; *Tisné point*, age of granodiorite, 166; *Vanda lake*, Sr in lake water, 296, trace elements in water, 297; *Vestfjella*, dolerite, 323; *Weaver mt.*, volcanic rocks, 323

thiphyllite, crystal-field phenomena, 177; formed from hornblende, 306; Mössbauer effect, 177; polytypic with cummingtonite, 32; synthesis, 288; *Crimea*, formed from actinolite, 306

thracite, *Pennsylvania*, 282

thrax, 207

tni-Atlas v. Algeria; *Morocco*

tnigrite, comp., 308; structure, 307; *Hokkaido*, X-ray, 163

timonites, book, 6

timonides, book, 6

timony, determination, 198, 207, 259; in galena, 222; in meteorites, tektites, rocks, 207; in river waters, 204; *Crimean mts.*, 115

- compounds; relationship of oxychlorides, 106

- ores, *Kirghizia*, 272; *Tatra mts.*, 101; *Transbaikal*, 278

tnioquia v. Colombia

tnlerite, *Turkey*, 78

tnite (fluorapatite), electron paramagnetic resonance, 94; in rocks with Fe, Ti-oxides, 284; IR spectrum, 224; phase relations, 25; structure, 266; synthesis, 26; *Azov*, Ga in, 200; *Baravia*, in granodioritic rocks, gneiss, 68; *Brittany*, Sr-bearing, 313; *Dnieper*, rare-earths in, 198; *Holstein*, in fossil wood, 337; *Karkaralinsk*, in volcanic rocks, 7; *Mexico*, 244; *New York*, in pyrrhotite veins, 78; *Portugal*, X-ray, 252; *Silesia*, in basalt, X-ray, 63; *Ukraine*, opt., 303

- group, crystal chemistry, 143

- mimetite series, 144

- rocks, *Baikal*, 321; *Malawi*, comp., 235

pennines v. Italy

plite, *Aar*, comp., 247; *Cornwall*, origin, 68

plowite, *Nova Scotia*, comp., opt., X-ray, 131

phyllite, etch patterns, 335; *Kureyka river*, X-ray, d.t.a., 133; *Kyoto*, X-ray, d.t.a., 308; *Nova Scotia*, anal., X-ray, 52

ppalachians v. Pennsylvania; *United States*

pparatus & techniques, 3, 83, 169, 257

pusen mts. v. Romania

queoglacial sediments, 71

quifer, *Ciscaucasia*, hydrocarbons in, 297

quitaine v. France

RABIA, *Aden*, magnetism of volcanic rocks, 337; *Gulf of Aden*, calcite, quartz, clay minerals, 91; *Jebel Khariz*, magnetism of volcanic rocks, 337; *Trucial coast*, huntite in carbonate sediments, 142; *Wabar*, *Saudi Arabia*, impactite glass, 44

Aragonite, dissolution at depth, 224; identification, 259; in fossils, 116, 241; in rudists, 339; inversion to calcite, 107; IR absorption, 224; stability in sea-water, 142; transformation to calcite, 192; twinning, 334; *Adriatic*, dissolved from core, 241; *Ariège*, in cave, 339; *Japan*, in spring waters, 119; *Madrid*, 162

Aral Sea v. USSR

Arbagar, *Siberia v. Russian SFSR*

ARCTIC, age of driftwood, peat, 3; interstitial waters of sediments, 204; spherules in ice, 215; *Axel Heiberg island*, anhydrite in domes, 324; *Ny Friesland*, sedimentary rocks, 329; *Olav V Land*, sedimentary rocks, 329; *Spitsbergen*, ages of glacial stages, 168, gypsum in Carboniferous rocks, 77; *Wedel Jarlsberg Land*, amphibolites, 73

Ardennes v. Belgium

Ardgill, New South Wales v. Australia

Arnamurchan, *Argyllshire v. Scotland*

Arenas, *Sardinia v. Italy*

Arendal v. Norway

Arfvedsonite, comp., isomorphism, 306

Argentat v. France

Argentian todorokite, *Nevada*, anal., X-ray, 126

ARGENTINA, genesis of Cu ores, 17; *Aqua Heliodora*, Fe ores, 278; *Buenos Aires*, age of gneiss, granite, amphibolite, 256, clays, 11; *Cañadón Gato*, meta-autunite, 313; *Catamarca*, spodumene, 281; *Cochinoca*, *Jujuy*, ammonia alum, 56; *Córdoba*, Li minerals, 281; *Humul*, U-Cu ores, 273; *La Esperanza*, *Salta*, linnæite, ullmannite, millerite, 274; *Los Lecherones*, *Jujuy*, Fe ore, 278; *Salta*, amblygonite, lepidolite, 281; *San Luis*, Li ores, 281; *Sierra Chica de Zonda*, sanjuánite, 314; *Tincalaya mine*, *Salta*, macalisterite, 313; *Valcheta*, *Rio Negro*, zeolite, 52

Argillaceous rocks, *Ciscaucasia*, 244

Argillite, *New Zealand*, Se in, 39; *Ontario*, comp., 244

Argon, in meteorites, 208; in oil-field waters, 205; in sedimentary rock minerals, 293; isotopes in U minerals, 167; isotopes from uraninite, 41; lost from sylvite, 167; melting curve, 25

Argyrodite, identification, 141

ARIZONA, age, origin of Cu ores, 113; bisbeeite, 221; contact metamorphosed limestone, 72; hydrothermally altered rocks around ores, 98; kimberlite pipes, 228; magnetism of basalt, 162; *Ajo*, shattuckite, 54; *Basin range*, age of igneous & metamorphic rocks, 261; *Big Horn*, planchéite, 79; *Glove mine*, *Santa Cruz Co.*, oxidized Pb-Ag-Zn ores, 21; *Meteor crater*, impactite glass bombs, 44

ARKANSAS, Ba in rocks, 258; *Batesville*, *Independence Co.*, Mn minerals, 338; *Little Rock*, age of alkaline rocks, 256; *Magnet Cove*, age of alkaline rocks, 256

Arkansan river v. Colorado

Arkhangel'sk v. Russian SFSR

Arkose, *Congo*, near Cu ores, 329

ARMENIAN SSR, accessory minerals in volcanic rocks, 7; *Bazum range*, metallogenesis of volcanic rocks, 7; *Kafan(sk)*, black calcite, 143

Arnage, *Aberdeenshire v. Scotland*

Arno river v. Italy

Aroostook Co. v. Maine

Arsenic, in meteorites, 211; formed from gel, 20; *Crimean mts.*, in rocks, 115

- compounds: synthesis of $As_2O_5 \cdot Al_2O_3 \cdot (Na_2O)_4 \cdot 15 H_2O$, 26

Arsenides, book, 6

Arsenopyrite, *Portugal*, X-ray, 252; *Pyrenees*, ores, 274; *Rhodesia*, as geobarometer, 222; *Tessin*, 186

Artesian basin, *Queensland*, clay minerals & trace elements, 37

Artinite, *Nevada*, 78

Arve valley v. France

Arveyron v. France

Asbestos, world resources, 22

Äsby v. Sweden

Ascension island v. Atlantic Ocean

Ascharite, 144

Ash beds, *New Zealand*, 327

Ash-flow, *Colorado*, 69, tuffs, 323; *Nevada*, crystallization, 315

Ashio mine, *Honshu v. Japan*

Ashton Park, *Gloucestershire v. England*

ASIA, monazite, 97; *Persian Gulf*, organic matter in sediments, 203

Askja v. Iceland

Asmaca v. Turkey

Asphalt, in bituminous shales, 203; world resources, 22; *Trinidad lake*, hydrocarbons in, 38

Asphaltic pyrobitumina, definition, 245

Asphalite, definition, 245; *Transbaikal*, in hydrothermal veins, 144

Assisi v. Italy

Asteroids, as sources of meteorites, 298; C, O isotopes in, 116

Aston v. France

Aston-Hospitalet v. France

Astrobleme, *Australia*, 215; *Sweden*, 126

Astrophyllite, *Colorado*, structure, 178; *USSR*, anal., 139; *Virginia*, 79

Aswan v. Egypt

Atacama v. Chile

Atacama desert v. Chile

Atakor v. Algeria

ATLANTIC OCEAN, carbonate deep-sea cores, 117; clay minerals at continental margin, 12; early history, 253; Li in deep-sea clay, 202; magnetism of cores, 339; Sn mineral belts, 276; Sr in sea-water, 204; trace elements in Mn nodules, 117; *Ascension island*, fluid inclusions in granitic rocks, 34; *Azores*, volcanic eruptions, 153; *Bay of Biscay*, trace elements in clays, 37; *Bermuda rise*, clay minerals, 12; *Canary islands*, alkali basalts, 230, volcanic eruptions, 153; *Cape Verde islands*, volcanic eruptions, 153; *Caribbean*, deep-sea cores, 117, 164, sedimentary cores, 80, Sr in sea-water, 204; *Fuerteventura*, Ti, Al in basaltic lavas, 316; *Fogo*, *Cape Verde islands*, geological map, 61; *Graciosa*, *Azores*, caldera, 326; *Great Bank of Newfoundland*, submarine bed-rock, 8; *Mid-Atlantic ridge*, Ba, Co, Ag in core, 293; magnetism of igneous rocks, 230; *St. Helena*, age of volcanism, 168; *St. Paul's rocks*, peridotite-mylonite minerals, 67; *Tenerife*, *Canary islands*, volcanoclastic rocks, 63

Atmosphere, U in aerosols, 42

Atomic absorption spectrometry, book, 88

Atomic absorption spectrophotometry, 79

Attapulgite v. palygorskite

Aubrac mts. v. France

Aude v. France

Augite, high-pressure deformation, 302; *Donegal*, dendritic in dolerite, 47; *Itala*, comp., 318, anal., 61; *Georgian SSR*, comp., opt., 320; *Guiana*, in granulite, gneiss, 159; *Japan*, comp., 323; *Minas Gerais*, dispersion of birefringence, 167; *Quebec*, comp., opt., 46; *Queensland*, from gabbro, anal., opt., 64; *Siberia*, in trap-rocks, 217; *Swieta Anna*, in basalt, anal., X-ray, 63

Aurichalcite, *Massachusetts*, 163

Aurora mine v. Nevada

Aurorite, *Nevada*, anal., X-ray, 126

Austinite, *Utah*, 144

AUSTRALASIA, origin of tektites, 213

AUSTRALIA, magnetism of hematite ore-bodies, 166; metamorphic rocks, 261; monazite, 97; radiocarbon dating, 81; Re in molybdenites, 57; sedimentary zircons, 303; S isotopes in Pb-Zn sulphide ores, 291; stillwellite, 53; *Timor Sea*, Mn-Fe nodules, 203

—, NEW SOUTH WALES, cyclic sedimentation in Carboniferous, 155; Devonian sedimentary rocks, 155; maghemite, goethite in laterite, 155; rutile-like pegmatitic mineral, 54; siderite, pyrite in coal, 71; *Acacia vale*, *Silverton*, sillimanite, 281; *Ardglen*, *Liverpool ranges*, todorokite, 223; *Broken Hill*, asbestiform bustamite, 305, garnetiferous quartzites, Pb-Zn ores, 21, origin of orebody, 67, Pb-Zn ores, 273; *Budthingeroo*, *Sydney*, amphiboles in meta-diabase, 217; *Coolac*, altered chrome ores, 311; *Hanging Rock*, *Nundle*, chlorite, 219; *Kangaroo West mine*, *Coolac*, chlorite, 219; *Mullaley*, basalts, alkaline lavas, 64; *Muswellbrook*, dawsonite, 163; *Nandewar mts.*, aenigmatite, 218; *Prospect, Sydney basin*, alkaline diabase, pierite, 64; *Sydney basin*, analcite, 323, phosphatic bands in sediments, 155; *Upper Hunter valley*, hallosite, 263; *Wally*, segregation vesicles in lavas, 324; *Yooroonaah*, *Ebor*, Sn-Zn-Pb ore, 276

—, NORTHERN TERRITORY, *Gosses Bluff*, astrobleme, 215; *Orlando mine*, *Tennant creek*, Au-Cu ores, 18

—, QUEENSLAND, age of intrusive rocks, 166; siderite, pyrite in coals, 71; *Bowen basin*, metamorphosed coal, 72, tonstein in coals, 11; *Einasleigh*, metamorphic rocks, minerals, 64; *Eromanga*, clay minerals, trace elements, 37; *Georgetown*, volcanic & plutonic rocks, 323, volcanic cauldrons, ring-complexes, granites, 152; *Mount Morgan*, Cu-Au-Ag ores, 100; *Somerset dam*, layered granophyre, gabbro, 64

—, SOUTH AUSTRALIA, *Adelaide*, crustal thickness, 339; *Crocker Well*, absite, 103; *Dome Rock mine*, Cu arsenates, 163; *Palmer*, deformed diopside, 24, granitic gneiss, 74

—, TASMANIA, age of igneous rocks, 1; Mesozoic basaltic rocks, 200; *Darwin*, glass, 214; *Lyell*, mt., hematite bodies, gossans, 279; *Great Lake*, dolerite, 67; *Tamar valley*, basaltic rocks, 151; *Trial Harbour*, metamorphism of volcanic rocks, 72

—, VICTORIA, *Lismore*, hay-silica glass, 302; *Macedon*, glass, 214

—, WESTERN AUSTRALIA, Fe ores, 279; jaspilite, 279; laterite bauxite, clay, 23; *Avoca Downs Homestead*, *Kalgoorlie*, meteorite, 301; *Bonaparte Gulf basin*, pebble sandstone, dolomite breccia, 71; *Ecula basin*, meteorite, 43; *Mount Angelo*, *East Kimberley*, Cu ore, 274; *Kalgoorlie*, nolanite, 55; *Kimberley*, bauxite, 22; *Marchagee*, saponite, 92; *Mount North*, *Fitzroy basin*, age of lamproites, 1; *Nullarbor plain*, meteorites, 124; *West Kimberley*, priderite, 223; *Wittenoom gorge*, platy stilpnomelane, 49; *Wolf Creek*, weathered meteorite, 129

Australites, K/Rb in, 303

AUSTRIA, type rocks of Bernstein zone, 332; *Alps*, heavy minerals, 71, ore genesis, 184; — compounds: synthesis of Ba-Ta oxide, 16

Leiberg, baryte, 184; Pb-Zn ores, 184; *Habach*, emeralds, 196; *Kraubath*, *Styria*, ultramafic rocks, 232; *Oberdorf*, magnesite-talc, 281, pyrite, 57; *Sarntal*, amphibolite, 247; *Trattenbach*, Cu ores, 184; *Vienna basin*, salinity of sediments, 296; *Vorau*, fuchsite, chrome-biotite, molybdenite, 338; *Waldeheimat*, quartz phyllite, 247; *Weinsberg*, plagioclase, 260

Austurhavn v. Iceland

Autunite, *Limousin*, 273; *Turkey*, 273

Auvergne v. France

Älvike v. Sweden

Avoca Downs Homestead, *Western Australia v. Australia*

Awarauite, *Shikoku*, 163

Axel Heiberg island v. Arctic

Axinite, *Connemara*, anal., opt., 134; *Moravia*, altered, 49

Ax-les-Thermes v. France

Ayrshire v. Scotland

Ayu-Dag v. Russian SFSR

Azegour v. Morocco

AZERBAIJAN SSR. B in oils, 41; chromite in ultrabasic rocks, 275; Co in muds, 205; *Dashkesan*, alloclastite, 310, magnetite, 141; *Kuba*, montmorillonite-hydromica, 264; *Lesser Caucasus*, Sc in ultrabasic rocks, 200

Azores v. Atlantic Ocean

Azov v. Ukrainian SSR; USSR

Baddeleyite, rotation properties, 145

Badkhyz v. Turkmenian SSR

Baganza valley v. Italy

Bahamas v. West Indies

Bahia v. Brazil

Baia de Aries v. Romania

Baie (Baia) Mare v. Romania

Baikal, Siberia v. Russian SFSR

Baita Bihor v. Romania

Baixo Alentejo v. Portugal

Baja California v. Mexico

Baker mt. v. Virginia

Baker river v. New Hampshire

Balderhead dam, Yorkshire v. England

Balearic Sea v. Mediterranean Sea

Balkhash v. Kazakhstan SSR

Ballon d'Alsace v. France

Ballyconneely, Galway v. Ireland

Baltic Sea v. Europe

Baltic shield v. Europe

Bamble v. Norway

Banankoro v. Guinea

Banatite, *Banat*, contact zones, 245

Bancroft, Ontario v. Canada

Banc-y-Warren, Cardiganshire v. Wales

Banded structure, in obsidian, 229

Banffshire v. Scotland

Ban Mae Jong v. Thailand

Bannisterite, *Caernarvonshire*, 314; *New Jersey*, anal., opt., X-ray, 314

Ban Sam Sui v. Thailand

Baragolai mine v. India

Barbados v. West Indies

Barfleur v. France

Barite v. baryte

Barium, determination, 198, 258; in adularia, 42; in deep-sea core, 293; in metamorphosed granitoids, 199; in pelagic sediments, diatoms, 117; in plagioclase, 52; in sōvites, alnōites, kimberlites, 115; in tektites, impactite glass, 214; proton irradiation, 300; *Africa*, in basalts, 148; *Alnō* in carbonatite, 36; *Marsburg*, in granite pluton, 114; *Norway*, in plagioclase, 219; *Oregon*, in tonalite, 236

Basanite, *Serbia*, comp., 319

Basement rocks, *Carpathians*, complex, 33; *Irkutsk*, bitumen in, 295; *Norway*, 73

Basic complex, *Transvaal*, 235

Basic intrusions, *Arctic*, 151; *Bohemia*, joint minerals, 77; *USSR*, with Cu-ores, 307

Basic rocks, chemical comp., 114; layered, 173; order of crystallization, 323; trace elements in, 39; *Aberdeenshire*, *Caledonia*, 60; *Enihei*, 150; *Japan*, inclusions

Barium-francavillite, anal., opt., X-ray, d.t.a., 55

Barroisite, *Norway*, in eclogite, anal., opt., X-ray, 47

Barsonovite, *Kola*, 252

Barylite, synthesis, opt., X-ray, 109

Barysilite, synthesis, analogues, X-ray, 108; synthesis, X-ray, 286

Baryte (barite), carbonatitic, 115; etching, 160; gas-liquid inclusions, 290; identification, 259; solubility in chloride solution, 107; *Bavaria*, Hg in, 33; *Carpathians*, zoned deposits, 102; *Derbyshire*, layered epigenetic, 21; *Dreislar*, *SrSO₄* in, 33; *Finland*, Ca in, comp., X-ray, 143; *Gaistal Alps*, layered deposits, 18; *Georgia*, in cavities in limonite, 7; origin, 78; *Germany*, in pyrite-sphalerite deposits, Sr in, 34; ore-bodies in greenwacke, 280; *New York*, banded, 33; *Portugal*, with quartz globules, 220; *Sardinia*, colour & pleochroism, 70; *Transbaikal*, gas-liquid inclusions, 143; — deposits, *Arkansas*, test for Ba, 25; *Erzgebirge*, *SrSO₄* in, 290

Barylolamprophyllite, *Lovozero*, anal., opt., X-ray, 129

Basalt, activation analysis, 198; columnar structure, 237; Eu in, 292; extrusive crystallization, 315; from island arcs, 31; geosynclinal, alkaline, 320; Hg in, 127; In in, 260; intrusive crystallization, 314; molten, crystallization, 287; phase equilibria, 87; phase relations in glass, 28; pressure & melting, 31; relation to kimberlite, 59; silica saturation, 325; transition to eclogite, 243; *Africa*, comp., trace elements, 148; *Alto Vinentino*, dykes, 23; *Atlantic*, magnetism, 230; *Azores*, 32; *Bombay*, Fe-rich, 322; *Canaries*, alkali, 230; *Carpathians*, 319; *Faeröes*, Ti, Al in, 316; *Germany*, 319; *Greenland*, with porphyritic feldspar, 60; *Hungary*, 32; *Idaho*, age, 1; *Indian Ocean*, 321; *Iwo Coast*, andesitic, comp., 63; *Japan*, alkali with inclusions, comp., 322, lanthanides in, 325; *Karayelakh mts.*, trace elements in, 114; *Kerguelen*, with red beds, 7; *Korea*, Cu in, 338; *Mellenbach*, comp., 290; *Mont-Dore*, age, 82; *Mysore*, comp., 150; *New Guinea*, 64; *New Mexico*, 20; *Arizona*, magnetism, 162; *New Zealand*, age, 256; Se in, 39; *Nigeria*, with feldspars, phenocrysts, 321; *Oregon*, Cl, Br in, 20; *Reunion*, sill, 148; *Sardinia*, 61; *Siberia*, classification, 145, rare-earth elements in; thermal study, comp., 229; *Sweden*, survey, 230; *Svieta Anna*, comp., d.t.a., 63; *Vicenza*, altered, 231; *Virginia*, 15; *Voronezh*, 320; *Washington*, 151, age, flow directions, 67

—, analcite, *Israel*, comp., 156

Basaltic rocks, geochemical comparison, 20; magnetic polarity, petrology, 60; trace elements in, 292; with peridotite inclusions, 228; *Tarpo*, origin, comp., 32; *Tasmania*, 151; *Turkmenia*, comp., 14; *Yellowknife*, *Canada*, oxides in, 34

Basanite, *Serbia*, comp., 319

Basement rocks, *Carpathians*, complex, 33; *Irkutsk*, bitumen in, 295; *Norway*, 73

Basic complex, *Transvaal*, 235

Basic intrusions, *Arctic*, 151; *Bohemia*, joint minerals, 77; *USSR*, with Cu-ores, 307

Basic rocks, chemical comp., 114; layered, 173; order of crystallization, 323; trace elements in, 39; *Aberdeenshire*, *Caledonia*, 60; *Enihei*, 150; *Japan*, inclusions

asic rocks, (contd.)
 alkali basalts, 322; progressive metamorphism, 159; *Lower Siberia*, leucocratic alteration zone, 320; *Queensland*, forming layered intrusion, 64
Asin range v. Arizona; Mexico
As-Languedoc v. France
Asse-tite, Turkey, 273
Ass lake v. California
Aspnasite, F₂, IR absorption, 16
 -, OH-, IR absorption, 16
Asutoland, Karroo basalts, 148
Asutoland v. Arkansas
Atolith, California, radioactivity, 230
Atthurst, New Brunswick v. Canada
Asymhauerite, rotation properties, 145
Aux v. France
Bauxite, diaspore in, X-ray, 55; electron microscopy, 141; genesis, 294; origin, 102; relation to flint-clay, 176; *Alabama*, 22; *Baux*, pisolithic, with gibbsite, 141, striped, comp., d.t.a., t.g.a., 175; *Dalmatia*, with marine fossils, 175; *France*, origin, 23; *Ghana*, comp., 289; *Hungary*, 177, trace elements in, 295; *India*, Ga in, 295; *Jamaica*, origin, 281; *Kursk*, origin, comp., X-ray, 102; *Massif Central*, heavy minerals in, 242; *Mysore*, 22; *Turkey*, comp., X-ray, 281, origin, 281; *Western Australia*, 22, comp., 23
Bavarria v. Germany
Bavno v. Italy
Bayerite, structure, 269; *Hungary*, 176
Bay of Biscay v. Atlantic Ocean
Bay of Islands, Newfoundland v. Canada
Bayrischer Wald v. Germany
Bazum range v. Armenian SSR
BCR-1, comp., 32; Cu, Ga, Zn in, 86; Mg in, 5; V in, 85
Beach sediments, magnetic spherules in, 153; size & shape of grains, 327; *Gulf of Lion*, radioactivity, 327
Beach-rock, on coral islands, 240; *Adriatic*, 242; *Western Australia*, 71
Beauvoir v. France
Bedford Co. v. Virginia
Beforsite, Malawi, comp., 234
Beidellite, structure, 263; *Ob-Irtush*, 91
Beillard v. France
Belemnites, Ca, Mg in rostra, 206; comp., 327; temp. of seas, 206
BELGIUM, clay minerals, 174; heavy minerals in sands, 327; magmatic rocks, 317; *Ardennes*, metamorphism, 317; *Blaton*, *Hainault*, strunzite, 224; *Lovagnée*, *Andenne*, clay minerals, 174; *Salmchateau*, viridine, 216, viridine, braunite, 303; *Scheldt river*, greigite in mud, 310
Belhelvie, Aberdeenshire v. Scotland
Belledonne v. France
Bellinzona v. Switzerland
Bementite, Arkansas, 338
Bennet mine, Caernarvonshire v. Wales
Benitoite, electron paramagnetic resonance, 94
Benjaminite, Kuramin range, anal., X-ray, 225
Benmoreite, Reunion, in sill, 148
Bentonite, as binder for Na₂CO₃, 176; swelling, 8; *Baie Mare*, d.t.a., 13; *Giesien*, 13; *Hungary*, effect of heating, 176; *Mád*, stability, 176; *Poland*, 243
Bentonitic clay, plasticity, 10
Berne v. Nigeria
Bérard lake, Quebec v. Canada
Beraunite, structure, 181; *Hainault*, 224
Berborite, USSR, comp., opt., X-ray, 128
Beregovaya v. Ukrainian SSR
Berelekh, Siberia v. Russian SFSR
Bergamaskite = mixture, 217
Bergell v. Germany; Switzerland
Berggesshübel v. Germany
Bermuda rise v. Atlantic Ocean
Berndtite, Bolivia & S.W. Africa, X-ray, 126
Berry, Colorado & Sweden, comp., X-ray, 225; *Greenland*, comp., X-ray, 225
Berthierine, Paris basin, 13
Berthierite, Slovakia, 101
Bertrandite, formed from beryl, 134; *Algeria*, 277; *S.-W. Africa*, formed from beryl, 216
Beryl, hydrothermal synthesis, Co in, 31; IR spectrum, 216; K metasomatism, 134; proton magnetic resonance, 94; synthesis, 109; *Baveno*, comp., 304; *Congo*, in pegmatite, 322; *Connecticut*, 46, 338; *India*, anal., 134, comp., 136; *Portugal*, X-ray, 252; *Rhodopes*, in pegmatite, anal., X-ray, 145; *S.-W. Africa*, altered in pegmatite, 216, 304
Beryllium, determination, 4; geochemistry, 199; in ground-waters of dispersion aureoles, 40; *Algeria*, in Mn ores, 277; *Baikal*, in pegmatite minerals, 50; *Cornwall*, in granitic rocks, 188; *Morocco*, in idocrase, 277; *Norway*, in stream sediments, 37; *Tien-Shan*, in granitoids, 199
 — compounds: synthesis of oxide, 105
 — ores, *Alaska*, trace elements in, 298
Berzelite-Mn-berzelite series, X-ray, 192
Bessi, Shikoku v. Japan
Betafite, Kazakhstan, Sc in, 53
Betic Cordilleras v. Spain
Bet-Pak-Dala v. Kazakhstan
Betpakdalite, Bohemia, 101
Betuwe v. Netherlands
Bex v. Switzerland
Bezymyannyy volcano, Soviet Far East v. Russian SFSR
Bhalki v. India
Bhandara v. India
Bhusaria hill v. India
Bialskie mts. v. Poland
Bieber v. Germany
Bielice v. Poland
Big Creek v. Idaho
Big Horn v. Arizona
Bilgi v. India
Billiton, Indonesia v. East Indies
Binary systems, compound formation, 190; computer model of crystallization, 249; critical composition, critical temperature, 284
Bingham canyon v. Utah
Binnatal (Binnenthal) v. Switzerland
Biogeochemistry, Soviet Far East, of Sn ores, 206; *Tuva*, of Se, 206
Biotite, age from dispersion of birefringence, 83; Al in, comp., X-ray, 136; classification, 79; cooling coefficient, 263; experimental alteration, 111; from granitoids, Ta, Nb in, 49; IR absorption & comp., 48; in high-grade metamorphic rocks, 136; Mn in, 87; principal component analysis, 48; weathering in granite, 264; X-ray determination of Fe, 84; *Africa*, age, 81; *Alto Adige*, in metamorphic rocks, comp., 248; *Andhra Pradesh*, with linear structures, 49; *Antarctica*, age, 1, 166; *Azov*, Ga in, 200; *Balkan*, alkali metals, Be in, 50; *Bohemian massif*, F in, 293; *California*, age, 168; *Colombia*, age, 256; *Elba*, polytypes, X-ray, 218; *Georgia*, Fe, Mg in, 48; *Idaho*, comp., opt., 52; *Japan*, Mg, Fe in, 114; *Karamazov*, In, Tl in, 200; *Karelia*, Ti in, 199; *Kazakhstan*, Sc in, 53; *Kerala*, altered to pyrite, 57; *Kiso*, co-existing with stilpnomelane in schists, 137; *Madras*, with garnet in enderbite, 303; *Malawi*, age, 165, anal., opt., 235; *Manastir hills*, from plagiogranite, anal., opt., X-ray, d.t.a., 48; *May-sur-Orne*, in sandstone, 218; *Morvan*, age, 318; *North Carolina*, in sulphide ore, Fe, Cu in, 290; *Norway*, age, 166; *Quebec*, comp., opt., 46; *Queensland*, from vein & quartz rock, anal., 64; *Shetland*, in metamorphic rocks, 73; *Sierra Nevada*, with pleochroic haloes, 218; *Skye*, in basic rocks, comp., 60; *South Australia*, in gneiss, comp., 74; *Topar*, age, 257; *Transbaikal*, rare elements in, 49; *Transkei*, in dyke, 235; *Uganda*, in carbonatitic rock, anal., 148; *Ukraine*, opt., 303; *United States*, age, 256
 —, chrome-, *Styria*, 338
Bisbeeite, 221; definition, 54
Bismuth, in galena, 222; native, conditions for formation, 282; *China*, Bi-bearing minerals, 163
 — compounds: stability field of Bi₂S₃, 282
Bismuthinides, book, 6
Bismuthinite, Algeria, 18
 — aikinite series, 143, 270
 — uстарасите, *China*, 163
Bismutite, conditions for formation, 282; rotation properties, 145
Bismutoferrite, Bohemia, X-ray, IR, 53
Bitumen, from shale, 203; world resources, 22; *Donets*, in Hg ore, 291; *Irkutsk*, in basement rocks, 295; *Leicester*, amino acids in, 199; *Siberia*, in alkaline pluton, 298; *Swabia*, extracted from shale, 189; *Transbaikal*, in hydrothermal veins, 144
Bituminosity, of carbonate rocks, 203
Bixbyite, Madhya Pradesh, X-ray, 20
Bjordam v. Norway
Black Canyon v. Colorado
Black Forest (Schwarzwald) v. Germany
Black Hills v. South Dakota
Black Rock mine, Cape Province v. South Africa
Black Sea v. Europe; USSR
Black spherules, in beach sands, 153
Blast-furnace slag, 108
Blaton v. Belgium
Bleiberg v. Austria
Bleikvassli mine v. Norway
Blende v. sphalerite
Blue mts., Ontario v. Canada
Blue Ridge mts. v. North Carolina; Virginia
Bochnia mine v. Poland
Bođrum peninsula v. Turkey
Boehmite, formed from gibbsite, 11; *Baux*, in bauxite, 175; *Kursk*, in bauxite, opt., 102
Bohemia v. Czechoslovakia
Bohemian massif v. Europe
Bohlscheiben v. Germany
Bohus v. Sweden
Bohutin v. Czechoslovakia
Bolazec v. France
Bolecin v. Poland
BOLIVIA, Sn mining industry, 187; *Cochabamba mine*, crocidolite, 195; *Ilallagua*, Sn mine, 187; *Serro de Potosi*, berndtite, 126
Bol'she-Tokmak v. Ukrainian SSR
Bombay v. India
Bonaparte Gulf basin, Western Australia v. Australia
Bonchevite, Kazakhstan, anal., X-ray, 222
Bone, radiocarbon dating, 3; Sr in, 116
Bone china, constitution, 89
Bone valley v. Florida
Bonin islands v. Pacific Ocean
Bonney lake v. Antarctica
Book notices, 6, 87, 172, 260
Borak v. Yugoslavia

Borate minerals, Fe-Mg, 144; structures, classification, 177

Bordères v. France

Borgnezie, Congo, anal., opt., 305

Bornholm v. Denmark

Bornite, formula, 310; phase relations, 106; *Zambia*, 274

Borolan, loch, Sutherland v. Scotland

Boron, association with salt deposition, 203; determination, 4, 170, 293; in aqueous solution, IR, 32; *Crimean mts.*, in rocks, 115; *Dagestan*, in waters of oil deposits, 205; *Donbas*, in sedimentary rocks, 293; *Germany*, in Keuper, 294; *Jura*, in clay minerals, 202; *Tien-Shan*, in Palaeozoic, 39; *USSR*, in oils, waters, resins, 41; *Vienna basin*, in waters, 296

— compounds: mortar of carbide, 170; nitride grown from multi-component system, 334

Borras v. Norway

Bor-Uryakh, Siberia v. Russian SFSR

Bosnia v. Yugoslavia

Boss-Bizby v. Missouri

Bostonite, quartz, *Richtersveld*, 236

Bosumtwi crater v. Ghana

Boukdem v. Algeria

Boulangierite, *Slovakia*, 101

Bourdon v. Guinée

Bourbon v. Missouri

Bourbonnais v. France

Bouronite, *Slovakia*, 101

Bou Soufa mine v. Algeria

Bowen basin, *Queensland v. Australia*

Bracewellite, *Guyana*, 127

Brackebuschite, structure, 94

Brandisite, 137

Brannerite, *Tessin*, comp., 223; v. also absite

Braszowice v. Poland

Braumite, *Arkansas*, 338; *Belgium*, anal., opt., X-ray, 303; *Madhya Pradesh*, X-ray, 20; *Philippines*, 279

— ganophyllite ores, *Shikoku*, 49

BRAZIL, age of Minas series, 166; age of pegmatites, 3; Au in conglomerates, 277; C isotopes in carbonado, 201; *Amazon river*, trace elements in water, 204, U, Th, Ra in, 297; *Bahia*, magnetic spherules from beach sand, 153; *Carába, Bahia*, Cu ores, 298; *Desemboque, Minas Gerais*, age of pyroclastic rocks, 166; *Espinhaço mts.*, age of rocks, 166; *Itaiatia, Minas Gerais*, age of alkaline rocks, 166; *Malhada Limpa*, scheelite, 277; *Mantiqueira mts.*, age of rocks, 166; *Matola, Minas Gerais*, age of rocks, 166; *Minas Gerais*, age of rocks, 167; *Morro do Ferro*, rare-earths of Th ores, 185; *Pavão, Minas Gerais*, quartz twin, 220; *Poços de Caldas*, age of rocks, 166; *Rondonia*, cassiterite, 188; *Sacramento*, age of ugrandite, 167; *Saítre*, jacupirangites, alkali syenites, 236; *Serra Geral*, ferrian ilmenites, 223; *Serra Negra*, dunite, 236; *Timbauba, Parába*, scheelite, 277

Breccia, kimberlite, rare elements in, 201; *Antarctica*, volcanic, 323; *Colorado*, pipes, 66; volcanic, 323; *Italy*, mineralized, 273; *Rhum*, explosion, 230; *Russian platform*, explosion, 149; *Serra da Estrela*, granitic, 152; *Western Australia*, littoral, talus, 71

Brent crater, Ontario v. Canada

Breunnerite, *Skye*, in serpentinite, comp., 60

Brevig v. Norway

Brewster angle method, 83

Brianite, in meteorite, anal., opt., X-ray, 227

Briartite, thermal stability, 191

Brick-clay, 11; *Hungary*, 176; *Kirton*, 147

Bricks, dimensional changes, 175; of clay & plastic, 189; *England*, medieval, 93; *India*, manufacture, 263

Brine, origin of high-calcium type, 41; trace elements during evaporation, 40; *California*, sulphides in, 296; *Dead Sea*, chlorides in, 118; *Ghana*, comp., 289; *Red Sea*, 118; *Tiberias lake*, comp., 297

British Columbia v. Canada

British Guiana = Guyana

BRITISH ISLES, age of granites, 168; age of rocks, minerals, 2, 168; exchange equilibria in soils, 91; Fe, Ti in rocks, 171; Lias rocks, 242; ore Pb isotopes, 113; v. also *England*; *Ireland*; *Scotland*; *Wales*

Brittany v. France

Broken Hill, New South Wales v. Australia

Bromellite, synthesis, 105

Brome mt., Quebec v. Canada

Bromine, in meteorites, 207; in potash deposits, 294; *Dagestan*, in waters of oil deposits, 205; *Germany*, in salt deposits, 39

Bronzite, *Japan*, in symplectite, comp., 322; *Papua*, comp., 134; *Sahara*, in pyroxenite, comp., opt., 67

Bronzitite, equation of state, 250

Brown Derby v. Colorado

Brownmillerite, *Israel*, 245

Brucite, staining test, 170

Brueaud mine v. France

Bucks v. California

Buckwheat mine v. New Jersey

Budthingerro, New South Wales v. Australia

Buenos Aires v. Argentina

Bug river v. Ukrainian SSR

Bugul'min, Siberia v. Russian SFSR

Building materials, *Karelia*, 102

Bukhara-Khiva v. Uzbek SSR

Bukuka, Siberia v. Russian SFSR

Bukusu v. Uganda

Bull. Centre Recherches de Pau, journal, 13

BULGARIA, magmatic rocks, ores, 319; *Rb, Cs* in nitrogenous thermal waters, 119; *Dolen*, rare metal minerals in pegmatites, 273; *Iglika*, thaumasite, 310; *Manastir hills*, biotite from plagiogranite, 48; *Vishteritsa, Rhodopes*, pegmatite minerals, 144

Bulfonteinite, *Honshu*, 139

Buranga v. Rwanda

Burbankite, structure, 16

Burgess mine, Ontario v. Canada

BURMA, tabashir, 196

Burpala, Siberia v. Russian SFSR

Burro mts. v. New Mexico

Busachi, Sardinia v. Italy

Bushveld, Transvaal v. South Africa

Bustamite, *New South Wales*, asbestosiform, anal., opt., X-ray, 305

Butner v. North Carolina

Bütschliite, *Virginia*, 79

CAAS (syenite), Cr in, 171; V in, 85

Cacoxenite, *Hainault*, 224

Cadmium compounds: (Cd,Zn)S mixed crystals, 251; dislocations in iodide crystals, 24; single crystals of CdTe, 104; single crystals of selenide, 104

Cadmium ores, *Yukon*, 98

Cadouin v. France

Caesium, determination, 198; distribution in earth materials, 112; in river water, 204; in waters, 119; *Bulgaria*, in nitrogenous waters, 119

Calabria v. Italy

Calamita, Elba v. Italy

Calanda v. Switzerland

Calaverite, X-ray, 104; *Philippines*, 278

Calc-alkaline rocks, estimation of pyroxenes 83; origin by partial melting, 287

Aeolian isles, origin, 325

Calcareous crust, definition, 154

Calcareous deposits, *Japan*, near thermal springs, comp., 119

Calcareous rocks, *Caucasus*, Ca, O isotopes in, 202; *Hoggar*, lacustrine origin, 328

Calcilutite, *Carpathians*, 154

Calcioaegirine, *Yakutia*, anal., opt., 129

Calclogadolinite, synthesis, X-ray, 108

Calcite, biaxial, inverted from aragonite 107; change on heating, X-ray, 169

colour centre growth curves, 58; dichroism, absorption, 161; dispersion, 196; dissolution, 27; dissolution at depth, 224

elastic compliances, 249; fabric data, 250

formed from aragonite, 192; from carbonatite, comp., 36; genesis of Iceland spar 107; hydrothermal deposition, 28; identification, 259; in belemnites, 327; in shells, thermoluminescence, 83; IR absorption 224; kinetics of nucleation, 284; magmatic origin, 57; magnesian, synthesis 27, 284; reaction with sodium fluoride 80; thermal expansion, lattice parameters 250; X-ray induced luminescence, 161

California, magnesian, isotopes in, 241

Herald, in caves, 337; *Japan*, in spring waters, 119; *Kafansk*, with psilomelane inclusion, 142; *Metalliferous mts.*, with fluid inclusions, 275; *Michigan*, co-existing with dolomite, Sr, Mn in, 142

Mississippi valley, in Pb-Zn ores, 21

New Jersey, thermoluminescence, 338

Norway, in carbonatite, O isotopes in 291; *Příbram*, decrepitation, Mn, Fe in 57; *Pyrenees*, formation temperature 330; *Siberia*, in carbonatite, 326

Thuringia, 328

Calcium, determination, 4, 5, 86, 172, 259

in belemnites, 206; in differentiated igneous rocks, 292; in meteorites, 123

self-diffusion in scheelite, 192; *Mozambique*, in feldspars, 220; *New Hampshire*, lost from weathered silicates, 174; *Norway*, in plagioclase, 219

— compounds: alpha-form of sulphate, 28

carbonate in bicarbonated water, 107

elastic constants of CaF_2 , 76; etch patterns on fluoride, 335; flocculation of humates 203; hydrated hexacalcium alumoferrite, 8; reflectivity of monoferrite, 76

single crystals of fluoride, 104; solid solutions in tricalcium silicate, 8; solubility of sulphate, 26; solubility of sulphate, fluoride, carbonate, hydroxide 24; structure of $\text{Ca}_2\text{BaSi}_3\text{O}_9$, 178; structure of oxide, 9; structure of tricalcium silicate, 9; synthesis, opt., X-ray of hexaluminite, 106; synthesis, X-ray of $\text{Ca}_2\text{Fe-olivines}$, 286; syntheses, X-ray of $\text{CaPb}_2\text{Zn}_3\text{Si}_3\text{O}_{12}$, $\text{CaZnSi}_2\text{O}_6\text{H}_2\text{O}$, $\text{Ca}_2\text{Pb}_3\text{Si}_3\text{O}_{11}$, 286; synthesis, X-ray of fluorosilicate, 108; synthesis, X-ray of hydrogarnets, 109; synthetic metasilicate slag, 8

— isotopes, in dedolomitized limestone, 38

in hydroxyapatite, 284; *Caucasus*, in limestones, 202

— minerals: anal., opt., X-ray of $\text{CaSiO}_3\text{H}_2\text{O}$, 129; carbonate solubility in sea-water, 193, 224; disorder in CaMg carbonates, 182; etch patterns in fluoride 335; IR spectroscopy of phosphates, 224

O isotopes in sulphate, 39; rate of growth of concretions, 289; *Gujarat*, etched fluoride, 335

Calcrete, definition, 154

calc-silicate rocks, *Gujarat*, with piemontite, 46

Caldera, *Graciosa*, *Azores*, 326

Caledonian orogeny, *Norway*, age, 2

Caledonides, studied by models, 230; *British Isles*, age of slates, 2; *Scotland*, age of metamorphic rocks, 2; *Troms & Ofoten*, basement rocks, metasediments, 73

Caledonite, *Massachusetts*, 163

Cali *v. Colombia*

Caliche, definition, 154

CALIFORNIA, alpine ultramafic rocks, 228; eclogites, 159; Eu in batholith minerals, 292; interstitial waters of marine sediments, 204; joaquinite, 304; Pb isotopes in igneous rocks, 34; sediments, clay minerals, 12; source of obsidian, 42; Sr isotopes in sedimentary rocks, 238; *Coast ranges*, radioactivity of greywackes, 251; *Crestmore*, calcite-dolomite-periclaste rocks, 142; *Deep Springs lake*, calcite, dolomite, 27, isotopes in dolomite, 241; *Devils Post-pile*, *Sierra Nevada*, volcanic rocks, 65; *Imperial Co.*, glauconite, 181; *Laytonville*, deereite, 76; *Merrimac*, *Plumas Co.*, age of batholith, 168; *Mono Co.*, granite fused by andesite, 329; *Montezuma*, *San Diego Co.*, clintonite micas, 137; *New Idria*, clinochrositite, 194; *New Idria mine*, *San Benito Co.*, pendletonite, 131; *Pacheco pass*, cymrite, 221, metaconglomerate, 333; *Bass lake*, accessory minerals in granitic rocks, 34, allophane, 51, biotites, 218; *Bucks*, *Plumas Co.*, age of batholith, 168; *Pala*, *San Diego*, kunzite, 194; *Salton Sea*, sulphides in geothermal brine, 296; *Searles lake*, gaylorite, 84; *Shasta Co.*, pyrite deposits, volcanism, 17, 182; *Sierra Nevada*, radioactivity of batholith, 230; *Trinity Center*, magadiite, 129; *Yosemite valley*, *Sierra Nevada*, biotites, 218

Calimani mts. *v. Romania*

Calzirkite, *Siberia*, anal, opt., 224; *Uganda*, anal., 224

CAMBODIA, *Grand Lac*, Fe, silica in river waters, 119

CAMEROON, age of crystalline massifs, 165; kaolinites, 92

Caminau *v. Germany*

Campania *v. Italy*

Campiglia Marittima *v. Italy*

Captonite, *Alto Vicentino*, 232

CANADA, optical heterogeneity of feldspars, 51; Pb-Zn sulphide ores, 291; principal mineralizations of shield, 81; sodalite, 95

—, ALBERTA, Cl in shales, 115

—, BRITISH COLUMBIA, molybdenites, 97; *Hat creek*, *Bonaparte river*, poitevinitite, 131; *Ice river*, *Rocky mts.*, syenite-ijolite, pyroxenite, carbonatite, 66; *Kootenay*, galena, 1; *Revelstoke*, meteorite, 125; *Salmo*, wollastonite, 282; *Slocan*, new basic Zn carbonate, 128;

—, NEW BRUNSWICK, sulphide ores, 99; *Anaconda-Caribou*, chlorites in Cu-Pb-Zn ores, 49; *Bathurst*, Pb-Zn-Cu ores, 98, pyrite ores & volcanism, 182; *Dorchester mine*, *Westmorland Co.*, new basic Zn carbonate, 128; *Newcastle*, Pb-Zn-Cu ores, 98

—, NEWFOUNDLAND, *Bay of Islands*, layered basic rocks, 173; *Cape Race*, continental shelf, 77; *Labrador*, layered basic rocks, 173

—, NORTH-WEST TERRITORIES, *Great Bear lake*, pitchblende, 198; *Muskox*, ultramafic rocks 227; *Queen Elizabeth Islands*, anhydrite in domes, 151, basic igneous rocks, 151; *Yellowknife*, basic igneous rocks, 34

—, NOVA SCOTIA, *Magnet Cove mine*, *Walton*, moorhouseite, aplowite, 131; *North mts.*, zeolites, 52; *Pugwash*, *Cumberland Co.*, evaporites, 153

—, ONTARIO, sedimentary structures, 244; *Bancroft*, black corundum, sapphire, 196; *Blue mt.*, *Peterborough Co.*, minerals in litchfieldite, 330; *Brent crater*, carbonatite, alkaline igneous rocks, 65; *Burgess mine*, corundum, 196; *Craig mine*, corundum, 196; *Frood*, *Sudbury*, zoned Ni-Cu ores, 18; *Haliburton highlands*, Precambrian granite, 315; *Huntsville*, metamorphic zones, sulphide minerals, 159; *Marmaraton*, *Belleville*, pyrometasomatic Fe ore, 99; *Meach lake*, intrusive carbonate rock, 66; *Middleton*, metamorphic zones, sulphide minerals, 159; *Parry Sound*, metamorphic rocks, Cu minerals, carbonaceous deposits, 18; *Steep Rock lake*, pyrite ore, 279; *Sudbury*, origin of Ni sulphide ores, 19

—, QUEBEC, kimberlite, 164; O isotopes in metamorphic rocks, 296; phlogopite in marble, 334; radioactivity of shield rocks, 115; *Bérard lake*, basement rocks, magnetic dyke, Fe ores, 151; *Brome mt.*, kalsilite, diopside, melilite, 138; *Jeffrey mine*, *Asbestos*, minerals, 163; *La Trappe*, *Oka*, latrappite, 127; *Manicouagan*, palaeomagnetism of igneous rocks, 252; *Marbridge*, *Malartic*, Ni ores, 99; *Montreal*, alkaline ultrabasic rocks, 228, dawsonite, 58; *New Quebec*, shield rocks, 74; *Oka*, carbonatite, alkaline complex, minerals, 46; *Val D'or*, Au/Ag in ores, 277

—, SASKATCHEWAN, *Carswell*, shock metamorphism in circular structure, 72

—, YUKON, *Galena hill*, new basic Zn carbonate, 128; Pb-Zn-Ag ores, 98; *Keno hill*, Pb-Zn-Ag ores, 98

Cañadón Gato *v. Argentina*

Canary islands *v. Atlantic Ocean*

Cancrinite, structure, 15; *Ontario*, in litchfieldite, 330

Canfieldite, identification, 141

Canfranc Estación *v. Spain*

Canigou *v. France*

Cantal *v. France*

Capanne, *Elbo* *v. Italy*

Cape Colville peninsula, *North Island* *v. New Zealand*

Cape Evans *v. Antarctica*

Cape Lopez *v. Gabon*

Cape Race, *Newfoundland* *v. Canada*

Cape Royds *v. Antarctica*

Cape Thompson *v. Alaska*

Cape Verde islands *v. Atlantic Ocean*

Cape Vogel *v. East Indies*

Capo Calamita *v. Italy*

Cáspus *v. Romania*

Caráiba *v. Brazil*

Caranca *v. France*

Caribides, book, 6

Carbohydrates, *Ruhr*, in kaolinite claystone, 295

Carbon, determination, 4; heat of combustion, 190; in chondrites, 209, 212; in mollusc shells, 116; *Dagestan*, organic in Cretaceous, 116

Carbonado, *Brazil*, C isotopes in, 201

Carbonateapatite *v. dahlite*

Carbonate-cancrinite, magmatic origin, 57

Carbonate fossils, preservation by HF, 80

Carbonate microfacies, *United States*, book, 88

Carbonate minerals, CO_2 flotation, 103; depth indicators, 241; dissolution, 27; identification by thermal decomposition, 259; IR spectra, 58, 224; nodules in soil, 155; *Ditráu*, anal, opt., X-ray, 128; *Germany*, in Pb-Zn ores, 57; *Negev*, concretions in phosphorite, 224; *New Brunswick*, anal, X-ray, d.t.a., IR, 128; *Paris*, O, C isotopes, 176; *Sweden*, associated with ores, 143

Carbonate rocks, bituminosity, 203; Li in, 202; particle nomenclature, 327; standard, comp., 32; *Bushveld*, inclusions in gabbro, norite, 245; *Carpathians*, distribution of elements, 202; *Caucasus*, radioactive elements in, 202; *Dobrogea*, comp., 116, 243; *Israel*, mottled zone, comp., 245; *Oklahoma*, trace elements in, 202; *Ottawa*, intrusive, 66; *Thuringia*, Muschelkalk, 243

Carbonate-silicate rocks, *Malawi*, comp., 234

Carbonates, determination of HCO_3 , CO_3 ions, 4; disorder, 182; fractionation in deep-sea cores, 117; high-temp. solution chemistry, 97; *East Pennines*, band in coalfield, 202; *Kansas*, Sr in, 290

Carbonatite, average & typical composition, 36; chemistry & genesis, 62; comp. of calcite, dolomite, ankerite, 36; depth facies, comp., 293; fractional crystallization of magma, 25; phlogopite, K-feldspars in, 30; rare-earths in, 201; relationship to kimberlite, 59; review, 227; Sr isotopes in, 36; *Alnö*, Sr, Ba in, 36; *Brent crater*, *Ontario*, 65; *Colorado*, dykes, 66, Nb in, comp., 96; *Ice river*, in alkaline complex, 66; *Kaiserstuhl*, magmatic environment, 62; *Malawi*, comp., 234; *Norway*, O isotopes in, 291; *Quebec*, 46; *Siberia*, amphiboles in, 306, sedimentary origin, 326, with wollastonite, 224; *Sweden*, with wollastonite, 145; *Uganda*, residual soils, 224

Carbonatitic rocks, *Kangankunde*, comp., 235; *Uganda*, comp., 148

Carbon dioxide, around ore-deposits, 298; from soil, C isotopes in, 41; fugacity during metamorphism, 165; in quartz, 198; in Zechstein salt, 339; melting curve, 25; thermophysical properties, 283; *Hungary*, in gasfields, 295

Carbon isotopes, in diamond, carbonado, 201; in limestones, fossils, 118; in marbles, graphites, 39; in marine invertebrates, 116; in natural gases, 205; in plankton, sea-water, 297; in soil CO_2 , 41; *Baltic basin*, in limestone, 202; *California*, in calcite, dolomite, 241; *Paris*, in gypsum, 176; *Pennsylvania*, in carbonate from peridotite, 292

Carboxylic acids, in shale, 203

Cardiff *v. Maryland*

Caribbean *v. Atlantic Ocean*

Carmel, mount *v. Israel*

Carmen island *v. Mexico*

Carnallite, *Alsace*, 280

Carnallitite, *Stassfurt*, 23, 39

Carpathians *v. Europe*; *Hungary*; *Poland*; *Romania*

Carpatho-Balkans *v. Europe*

Carrara *v. Italy*

Carswell, *Saskatchewan* *v. Canada*

Cartagena *v. Spain*

Cartersville *v. Georgia*

Cassidite, in meteorite, comp., opt., X-ray, 129

Cassiterite, identification, 141; lattice constants, 141; magnetism, 276; morphology, 333; synthesis, 105; with genthelvite, anal., 138; *Congo*, habit

Cassiterite, (contd.)
variations, 333; *Czechoslovakia*, magnetism, 337; *Hälfers*, in Pb ore, 100; *Indonesia*, 276; *Malaya*, with magnetite inclusions, reflectivity, X-ray, 141; *Ruhengeri*, replacing feldspar, 188
— ore, *Amazonia*, 188; *USSR*, trace elements, in, 291
— sulphide ore, oxidation under permafrost, 33
Castiglioncello v. Italy
Castings, use of hornblende in production, 9
Catamarca v. Argentina
Catskill mts. v. New York
Caucasus v. Russian SFSR
Cauldron, volcanic, *Queensland*, 152
Causee v. France
Carvallo v. Algeria
Cavansite, *Oregon*, anal., opt., X-ray, 129
Cedar hill v. Missouri
Celadonite, *Khibiny*, comp., X-ray, 218
Celanova v. Spain
Celestine (celestite), *New York*, 79; *Thuringia*, 328; *Volgograd*, 117
Celsian, polymorphism, 288
Cement, clinker, 8; high-alumina, 25; minerals formed when heated, 8; shale slag, 9; slate-ash melts, 8
Centenillo v. Spain
CENTRAL AFRICAN REPUBLIC, age of granitic rocks, 81; Ag in Au nuggets, 100
CENTRAL AMERICA, Sr isotopes in volcanic rocks, 292
Central Asia=Soziet Central Asia
Central City v. Colorado
Ceramics, corundum, 8; Li aluminosilicates, 8; of mullite, 8; oxide systems, 25; properties of clay mineral mixtures, 176; raw materials, book, 173; symposium, 88; use of nepheline syenite, 189; *Hungary*, raw materials, 176; *Karelia*, pegmatites, 102
Cerianite, *Virginia*, 79
Cerium, from weathered eudialyte, 117
— compounds: synthesis of oxide, 26
Cernavoda v. Romania
Cernon v. France
Cerussite, identification, 259; IR absorption, 224; morphology, 160; *Turkey*, 273
Cesarolite, rotation properties, 145
Ceský Středohorí v. Czechoslovakia
Český Les mts. v. Czechoslovakia
Cetina di Cotoriano v. Italy
CEYLON, anandite, 219; hornblende-granulite subfacies, 74; star sapphire, 196; taaffeite, 196
Chabazite, identification, 259; *Moravia*, Sr in, anal., opt., X-ray, 52; *Nova Scotia*, X-ray, 52
Chagwe-Uayv v. Russian SFSR
Chain ridge v. Indian Ocean
Chalcantite, *Turkey*, 78
Chalcocite, stability, 26; synthesis, 285; tetragonal modification, 310; *Zambia*, 274
Chalcogenides, crystallochemical peculiarities, 94; of transition metals, 178
Chalcomenite, *Puy-de-Dôme*, 140
Chalcopyrite, 94; fusion, X-ray, 106; phase relations, 106; *Caucasus*, in ore pebbles, 113; *Kamchatka*, 275; *Karamazar*, In, Ti in, 200; *Rhodesia*, reflectivity, 186; *Tochigi*, Se, Cu, Fe, Zn, Cd in, 113; *Zambia*, 274
— ore, *New Mexico*, 272
Chalcostibite, *Slovakia*, 101
Chalk, hard & soft types, 153; *Dobrogea*, comp., 243; *Israel*, age, 257; *Paris basin*, flint & chert in, 153; *Rugen*, with layered structure, 243
Chamosite, as depth indicator, 241; *Kursk*, in bauxite, opt., 102; *Valais*, 242
Chamson v. Switzerland
Chandler Mills mine v. New Hampshire
Chandler wobble, 253
Channapatna v. India
CHANNEL ISLES, sea-floor sediments, 153
Chapmanite, relation to bismutoferrite, 53
Charles Davis mine v. New Hampshire
Charlotte mine v. New Jersey
Charlottesville v. Virginia
Charnockite, *Australia*, 261; *Greenland*, 73; *Kola*, comp., 158; *Massif Central*, enclaves in dyke, 156; *Norway*, 157; *Ukraine*, pyroxenes in, 305; *Velay*, with inclusions, 247; *Venezuela*, 333
Charnockitic rocks, *Kasai*, 322; *Malawi*, 235; *Ukraine*, pyroxenes in, 46
Châteaulin basin v. France
Chattenberg mine v. Germany
Chemical analyses, computation of mineral formulae, 4; Niggli norms, 170
Chemical analysis, absorptiometric methods, 85; boron carbide mortar, 170; solution techniques for silicates, 85
Chemical elements, abundance patterns in elements, 120; agglutination processes, 200; distribution in igneous rocks, 113; during magmatic crystallization, 291; geochemical dispersion in igneous rocks, 206; ionization potential & mineral formation, 289; multivalent in ore-deposits, 204; native, book, 6; sedimentary differentiation in basins, 36; statistical estimation, 197; variation in lithosphere with time, 32; *Carpathians*, in carbonate rocks, 202; *England*, in granitic rocks, 35; *Kola*, transported from intrusive massifs, 119; *Sayan*, in andesite-dacite, 292
Cheralite, *Verkhoyansk*, rare-earths in, 143
Chernovite, *Urals*, anal., opt., X-ray, 227
Chert, possible precursors, 129; *Negev*, 244; *Tennessee*, with geodes, 78
Chervetite, structure, 96
Chel v. Kazakh SSR
Chevkinite, structure, 177; synthesis, analogues, X-ray, 108; *Azov*, Ga in, 200; *Orissa*, 53
Chichibu mine, Honshu v. Japan
Chikla v. India
CHILE, hexahedrites, 211; volcanic ash soils, 265; *Andes*, rhyolitic volcanic rocks, 325; *Atacama*, age of ignimbrites, 2; humberstonite, 131; *Navarino island*, geosynclinal sediments, igneous rocks, 66
Chillagite, *Transbaikal*, anal., opt., 55
Chilwa island v. Malawi
Chimvadzulu hill v. Malawi
China, Bi minerals, 163; hydrochlorborite, 128; hydromagnesite, 142; jade, 261; meteorites, 125; picrophenite, 306; *Tsining* metamorphic rocks, 248; *Liaotung peninsula*, age of rocks, 81; *Showangfen*, fluorantigorite, fluochrysotile, 226; *Yenlin-kuan*, *Shantung*, age of metamorphic & igneous rocks, 257
Chinchon v. Spain
Chitradurga v. India
Chittanango falls v. New York
Chkalovite, Zn, structure, 177
Chloride brines, *Dead Sea*, 118
Chlorine, determination, 4, 85; in meteorites, 207; in terrestrial rocks, 115; in ultramafic rocks, 200; *Vienna basin*, in waters, 296
Chlorite, Al ions in, comp., X-ray, 136; change on heating, X-ray, 169; defect structure, 266; differentiation from kaolin minerals, 174; dioctahedral, structure, 14; electron bombardment, 288; estimation in clays, 262; Fe-, thermoreactions, X-ray, 111; identification, 89; IR absorption, 179; paragenetic type ferruginosity, 307; regular two-layer structures, 268; X-ray determination Fe, 84; *Akita*, dioctahedral, anal., X-ray, d.t.a., 307; *Dobrogea*, in green beds, 248; *Japan*, IR absorption, 90; *Khibiny*, weathered, X-ray, 92; *Lower Silesia*, from alteration zone, 320; *Michigan*, di-octahedral structure, 14; *Moravia*, formed from axinite, 49; *New Brunswick* in ores, comp., opt., X-ray, 49; *New South Wales*, with lizardite, anal., d.t.a., 219; *Okayama*, di-octahedral, X-ray, d.t.a., 307; *Shikoku*, from schists, comp., 137; *Skye*, basic rocks, comp., 60; *USSR*, comp. d.t.a., dehydration, 307
—Cr, *Turkey*, X-ray, 268
— group, nomenclature, 48
— montmorillonite, *Poland*, Triassic, 92
Chloritoid, *Côtes-du-Nord*, in schists, 331
Greina, 247; *Morbihan*, anal., opt., 17
North Carolina, in metavolcanic-metasedimentary rocks, 159
Chlorophaeite, Iceland, comp., 311
Chlorophoenite, New Jersey, 338
Chlorotite, South Australia, 163
Chondrites v. meteorites
Chrome-diopside, from garnet peridotite anal., 30; *Ukraine*, in lamprophyre, opt., 149
Chrome-spinellids, Kempsey, 223
Chromite, chemical-mechanical polishing 3; in chondrites, 122; in chondrules 210; in 'equilibrated' chondrites, 122; preferential leaching, 201; *Bushveld*, comp., 245; *Greece*, zoned, X-ray, 311; *India*, aluminian, comp., X-ray, 141; *Mauritania*, in metamorphic rocks, comp., 45; *New South Wales*, in altered chrome-ore, comp., 311; *Siberia*, nodular iron-dunite, anal., X-ray, 237; *Tottori*, formula, 141
— ore, conversion, 8; speed of reduction 275; *Azerbaijan*, in ophiolites, 275
Kempsey, with chrome-spinellids, 223
Chromitite, Bushveld, seam formation, 68
Chromium, determination, 85, 171, 198, 207 in laterite transition zone, 295; in meteorites, 123; in minerals from ultramafic rocks, 114; in river water, 204; in titanomagnetites, 223; *Caucasus*, in magmatic complex, 7; *France*, in volcanic rocks, 230; *Lower Tunguska*, in palagonite traps, 234; *Mont-Dore*, in lavas, 293; *Vienna basin*, in waters, 296
— compounds: Néel temperature of Cr_2O_3 , 250
— ores, *Australia*, altered, comp., 311; *Ghana*, comp., 289
Chrysoberyl, electron paramagnetic resonance, 94; *Moravia*, in pegmatite, 63
Chrysolite, Quebec, comp., opt., 46
Chrysophane, 137
Chrysotile, activity-product constant, 194 comp., 308; *Kyoto*, 91; *Spain*, 111
Chudzayr lake v. Russian SFSR
Chukhrovite, isomorphous series, 143; structure, 180
Chukotka, Soviet Far East v. Russian SFSR
Church Stretton, Shropshire v. England
Cigalère cave v. France
Cinerite, Mont-Dore, 147
Cinnabar, coordination of Hg, 94; *Gorno-Altaï*, secondary after tetrahedrite, 100; *Kerch' peninsula*, 199; *Khara-Ulakh*, clastic, 100; *Turkey*, 100; *USSR*, habit variations, 333

inovec v. Czechoslovakia
I.P.W. norms, calculation, 258
iscarpahians v. Ukrainian SSR
iscaucasia v. Russian SFSR
classification, mineralogical, petrographical, 316
lastic rocks, *Apennines*, 70; *Dalarna*, 146
lausthalite, *Puy-de-Dôme*, 140
lay, absorption of Cs, 11; as binding material, 175; cation exchange capacity, 89; dehydration, 90; determination of orientation, 174; dilatometry of products, 10; effect of colloidal hydroxides, 262; flocculation of clay, 262; in calcareous dolomite, 12; in engineering geology, 261; lignitic, oxidation, 93; particle-size analysis, 89; removal of Fe, Al_2O_3 , 189; sodium-rich, surface conductivity, 263; trace elements in, 37; two-component interstratified systems, 9; ultrasonic dispersion of suspensions, 91; *Andalusia*, IR absorption, 93; *Andenne*, 174; *Aquitaine*, Cretaceous, comp., 37; *Argentina*, comp., d.t.a., t.g.a., 12; *Bay of Biscay*, trace elements in, 37; *Dobrogea*, comp., 243; *Ghana*, comp., 289; *Illinois*, resources, 23, 175; *Israel*, exchangeable K, 262; *Japan*, vermiculitic, X-ray, 90; *Lara*, white, 175; *Mozambique*, 175; *Normandy-Brittany*, age, 257; *Pacific*, spectrography, 202; *Paris basin*, kaolinitic, ferruginous, 92; *South Carolina*, minerals in, 12; *Vaucluse*, Miocene, 174; *Virginia*, 93; *Western Australia*, lateritic, comp., 23; *v.* also brick-clay; fireclay; flint-clay
lay-ironstone, *Saar*, concretions in shale, 245
lay minerals, 9, 89, 174, 262; aqueous dispersions, 176; c/k ratio, 12; defect structure, 266; dehydration, 90; diffusion of K, 10; electron microscopy, book, 88; expanding varieties, 176; expansion on heating, 10; formed by aggradation, degradation, 12; identification by ignition loss & dye absorption, 9; in ceramic industry, 173; in marine sediments & sedimentary rocks, 92; ion-exchange with heavy metals, 275; Li in, 202; quantitative analysis of phases, 176; significance in sedimentary rocks, 176; synthesis from aluminosilicic gel, 111; thermoluminescence, 89; *Bavaria*, in loess, 12; *Bermuda rise*, in gravity cores, 12; *California*, in areas of subsidence, 12; *Catskill mts.*, in red beds, 13; *Congo*, in sandstones, pelitic rocks, 329; *England & Wales*, in marls, 13; *Gaile*, in basaltic soils, 175; *Jura*, B, Ga in, 202; *Kyushu*, in shales, mixed-layer 91; *Moravia*, from altered axinite, 49; *Ob-Irtys*, 91; *Paris basin*, in gypsum deposits, 176; Tertiary, 261, zoned distribution, 13; *Perugia*, in varicoloured schist, 12; *Poitou*, 92; *Poland*, in Triassic, 92; *Pyrenees*, in sediments, 92; *Queensland*, in artesian basin, 37
Clay products, dimensional changes, 175
Clay-rock, *Lubin*, with gypsum, 243; *Silesia*, origin, 71
Clay shale, *Öhlscheiben*, comp., 290
Clay slate, *Hungary*, comp., 333
Claystone, *Ruhr*, organic matter in, 295
Clay systems, cation exchange, 263; Newton's cooling coefficients, 263
Clearwater v. Idaho
Cleavage, in rocks, 160
Clinker, molten, 8; structure of grains, 9
Clinochlore, *Pyrenees*, formation temperatures, 330
Clinochrysotile, X-ray, 49; *California*, activity-product constant, 194
Clinoclase, *South Australia*, 163
Clinoenstatite, *Papua*, in volcanic rock, anal., opt., 134
Clinoholmquistite, *Siberia*, anal., opt., X-ray, 130
Clinohumite, *Kugi-Lyal mines* = forsterite, 44; *USSR*, X-ray, 303
Clinoptilolite, X-ray, 310; *Gun'ma*, X-ray, 137; *United States*, cation-exchange, anal., X-ray, 52; *v.* also potassium clinoptilolite
Clinopyroxene, Al_2O_3 in, 134; crystallization in basic rocks, 323; crystallographic nomenclature, 267; *Aberdeen*, from norite, anal., 60; *Atlantic*, in mylonite, 67; *Hocheifel*, in trachyte, 217; *New South Wales*, comp., 64; *Ukraine*, in eclogite, opt., 149; *Yakutia*, in xenoliths in kimberlite pipes, 303
Clinozoisite, *Bushveld*, Sr-rich, comp., 245; *Lower Silesia*, in alteration zone, 320
Clintonite, *California*, comp., 137
Cluster analysis, 79
Coal, definition, 70; electron paramagnetic resonance, 125; hydrocarbons in, 116; Mössbauer spectra of Fe, 117; reflectance, 23; U mineralization, 38; water-soluble organic acids in, 295; *Andhra Pradesh*, 80; *Australia*, with siderite, pyrite, 71; *India*, reflectance, 23; *Poland*, metamorphosed by porphyry, 329; *Queensland*, contact metamorphism, 72; *v.* also anthracite
Coalfield, *Ollerton*, 147; *West Virginia*, waters in mines, 189
Coal measures, *New South Wales*, with analcite, 323
Coal-pitch, softening, 189
Coast ranges *v. California*
Cobalt, determination, 170, 198; in deep-sea core, 293; in meteorites, 123, 211; in river water, 204; migration in water reservoirs, 205; *Black & Mediterranean Seas*, in sediments, 201; *France*, in volcanic rocks, 230; *Lower Tunguska*, in palagonite traps, 234; *Mont-Dore*, in lavas, 293
Cobalt-äkermanite, Ge substitution, 195
Cobalt compounds: magnetism, X-ray of sulphide, 27
Cobaltite, *Azerbaijan*, with alloclasite, X-ray, 310; *Japan*, 163; *Wallis*, 185
Cochambamba mine v. Bolivia
Cochinoca v. Argentina
Cocinerite = mixture, 140
Coesite, thermal properties, stability, 107
Coffinite, developed from gel, 20; *Spain*, comp., d.t.a., t.g.a., 304
Cogne v. Italy
Cohenite, occurrence & origin, 302; X-ray, 302
Coirons plateau v. France
Coke, *Poland*, formed from metamorphosed coal, 329
Collettes v. France
Collagen, radiocarbon dating, 3
Collins river, South Island v. New Zealand
COLOMBIA, *Amagá*, age of rock, 256; *Andes*, metallogenetic belts, 271; *Antioquia*, age of biotites, 256; *Cali*, tonstein, 93; *Cordillera Oriental*, *Andes*, sulphide ores in granite, 271
COLORADO, age, origin of Pb-Ag ores, 113; carboxylic acids in Green River Formation, 203; sedimentary rocks, 69; vermiculite, 263; *Arkansas river*, *Fremont Co.*, carbonatites, alkalic rocks, 66; *Black Canyon*, *Montrose Co.*, volcanic rocks, 323; *Brown Derby*, *Gunnison Co.*, micas, 136; *Central City*, metamorphic & igneous rocks, 75; *Cripple creek*, Au-Ag ores, 113; *Democrat creek*, *Fremont Co.*, syenite, gabbro, 66; *El Paso Co.*, astrophyllite, 178; *Fall river*, *Clear Creek Co.*, Au, Ag, U ores, 100; *Felch creek*, *Canon City*, geodes, minerals, 78; *Front Range*, age of Pre-cambrian rocks, 168; *Gem park*, *Fremont Co.*, gabbro, 66; *McClure mt.*, alkalic rocks, carbonatites, 66; *Missouri mine*, *Park Co.*, berryite, 225; *Piceance creek*, dawsonite, 58; *Pinon peak*, *Arkansas river*, breccia pipes, 66; *Powderhorn*, carbonatite, alkalic rocks, 96; volcanic rocks, 323; *Ralston Buttes*, *Jefferson Co.*, geology, U minerals, 101; *San Juan mts.*, ash flows, volcanic rocks, caldera, 69; *Slick Rock*, U in sandstone, 294; *Summitville*, *Rio Grande Co.*, altered volcanic rocks, 271
Coloradoite, *Philippines*, 278
Colour in minerals, centres in calcite, 58; centres in MgO , 76; of corundum, 311; of fluorite, 313; *Japan*, of sphalerite, 336
Columbia plateau v. North America
Columbite, *Bulgaria*, in pegmatite, 273; *Finland*, Sc-bearing, comp., X-ray, 312; *Ibaragi*, comp., X-ray, 142; *Transbaikal*, comp., 55
—tantalite (niobotantalite) group, comp., opt., X-ray, IR, 312; reflectivity, 55; X-ray, 142, 192
Colusite, identification, 141
Comendite, *S.-W. Africa*, 235
Computer programme, for fabric diagrams, 3; for main sedimentological parameters, 170; for Niggli values, C.I.P.W. norms, variation diagram data, 258; for processing microprobe data, 84; for refining cell parameters, 84; mineral formulae derived from chemical analyses, 4; structural formulae of silicate minerals, 84
Concrete, durability, 7
Concretions, rate of growth, 289; *Baltic Sea*, Fe, Mn, P in, 117; *Guadalajara*, ferruginous, 154; *Negev*, carbonate, 244
Conglomerate, *Aar*, gneissic, 247; *Thuringia*, 243
Congo, Cu silicates, 221; *Dekese*, analcite, clay minerals, 329; glaciated rocks, 154; *Kambove*, 'bisbeeite', 221; *Kamituga*, pegmatites, 322; *Katanga*, pitchblende, 198, planchéite, 54, S isotopes in sulphide ores, 187, shattuckite, planchéite, 221; *Kirumba*, K-rich lavas, 325; *Kobokobo*, beryl pegmatites, 322; *Liha*, U, Th minerals in pegmatites, 322; *Lueshe*, *Kivu*, alkali amphibole, 305, pyrochlore, 312; *Luiza*, *Kasai*, basement rocks, 322; *Maniema*, gold, 278; *Mapembe*, U, Th minerals in pegmatites, 322; *Mindouli*, planchéite, shattuckite, 53; *Musonoi*, cuprosklodowskite, 64; *Musoshi*, sandstones, arkoses, shales, 329; *Nyiragongo*, *Virunga*, rushayite, 227; *Samba*, analcite, clay minerals, 329
Conichalcite, *South Australia*, 163
CONNECTICUT, amphibolites, 74; *Haddam*, pegmatite minerals, 46; *Linsley pond*, S cycle in lake waters, 118; *Seymour*, spodumene, 194; *Simpson mine*, *Glastonbury*, beryl, muscovite, 338; *Stratford*, pegmatite minerals, 338; *Stamford*, Cu minerals in slag, 80, flint, 163; *Trumbull*, minerals, 163
Connemara, *Galway v. Ireland*
Continents, convective self-propulsion, 253; evolution of structures, 316
Cookeite, *Mozambique*, anal., opt., X-ray, IR, 308
Coolac, *New South Wales v. Australia*
Coosawhatchie v. South Carolina

Copper, determination, 5, 86, 170, 207; in chondrites, 300; in meteorites, 211; in sea-water, 41; whiskers synthesized, 104; *Colorado*, geochemical anomaly, 271; *Cornwall*, in granitic rocks, 188; *France*, in volcanic rocks, 230; *Georgian SSR*, in altered magmatic rocks, 200; *Indian Ocean*, in sediments, 293; *Korea*, native in basalt, 338; *Lower Tunguska*, in palagonite traps, 234; *Michigan*, with Ag, 54; *North Carolina*, in ore wall-rocks, 290; *Portugal*, in Miocene cyclothem, 36

Copperbelt v. Africa

Copper compounds: Cu valency in CuMn_2O_4 , 190; defect equilibria in high-temperature sulphide, 27; Mössbauer effect in CuFe_2O_2 , 15; structure of CuF_2 , 96; synthesis, cation valencies in $\text{Cu}_2\text{FeSnS}_4$, 27; synthetic $\text{CuSO}_4\text{H}_2\text{O}$, 131

Copper minerals: phase relations of sulphides, 26; *California*, dense Cu_2S polymorph, 296; *Connecticut*, in slag in sea-water, 80; *Katanga*, silicates, 221

Copper ores: deposition from solution, 204; mobility of components in Cu-Ni ores, 186; oxidation under permafrost, 33; *Algeria*, 18; *Argentina*, Cu-U ores, 273, origin, 17; *Arizona*, U, Th, K in, 98; *Austria*, 184; *Bihar*, in shear zone, 96; *Brazil*, 298; *Carpathians*, 274; *Congo*, metamorphosed sediments, 329; *Deva*, trace elements in, 186; *Fiji*, 274; *Kola*, S isotopes in Cu-Ni ores, 291; *New Brunswick*, chlorite in Cu-Pb-Zn ores, 49; *North Carolina*, 19; *Ontario*, 18; *Queensland*, Cu-Au-Ag ores in pipe breccia, 100; *Philippines*, prospecting methods, 298; *Pyrenees*, arsenic-bearing, 274; *Sor*, gas-liquid inclusions in Cu-Mo ores, 187; *Switzerland*, U in Cu-As ores, 185; *Troms*, 183; *Udokansk*, 186; *Western Australia*, 274; *Zambia*, 274

Coprolite, *Italy*, in limestone, 37

Coral, *Barbados*, age, 166; *Red Sea*, U isotopes in, 118

Coral islands, beach formation, 240

Cordierite, intergrown with quartz, 238; stability field, 157; staining test, 170; structural transformations, 8; synthesis, 88; *Banat*, X-ray, 245; *Georgia*, in biotite gneiss, 159; *Hokkaido*, in hornfels, 45; *Mayo*, in granite aureole, 156; *Pyrenees*, altered in spottet schists, 304

Cordillera de la Costa v. Venezuela

Cordillera Oriental v. Colombia

Córdoba v. Argentina

Cordylite, Malawi, opt., 235

Cores *v. deep-sea cores*

Cormeilles v. France

Cornwall v. England

Cornwallite, South Australia, 163

Corone structure, *Norway*, in troctolite, 59

Correlation studies, large-scale, 79

Corrensite, change on heating, X-ray, 169

Corundum, cause of asterism, 196; colour & trace elements, 311; deformation twinning, 160; dielectrics of ceramics, 8; elastic constants, 75, 335; fabric data, 250; gem uses, 196; reaction with aqueous chloride & hydroxide, 28; synthesis, 104; thermal diffusivity, 250; zonal iridescence, 311; *Ontario*, 196

Cosalite, *Algeria*, 18; *China*, 163; *Kazakhstan*, electrical properties, comp., 251

Cosmic dust, 302

Cosmic rays, tracks in meteorites, 208

Cosmochlore, from meteorite, X-ray, 305

Costa Rica, Irazú, volcanic ash eruptions, 240

Cottian Alps v. France; Italy

Coustouges-Lamanère v. France

Covellite, synthesis, 285; *Wallis*, 185

Cracow v. Poland

Craig Co. v. Oklahoma

Craig mine, Ontario v. Canada

Crateriforms, *Campania*, 240

Craton, *Kaapvaal, South Africa*, 272

Crawfordjohn, Lanarkshire v. Scotland

Creedmoor v. North Carolina

Crestmore v. California

Crimea v. Russian SFSR

Crimean mts. v. Russian SFSR

Cripple creek v. Colorado

Cristobalite, far IR spectrum, 76; formed from kaolinite, X-ray, 179; hydrothermal synthesis, 107; *Hokkaido*, X-ray, 163; *Slovakia*, formed from montmorillonite, 245

Crocidolite, Mössbauer effect, 177; *Bolivia*, oxidation, anal., 195

Crocker Well, South Australia v. Australia

Crocrite, *Dordogne*, anal., X-ray, 162

Crozet island v. Indian Ocean

Cryolite, stability, parageneses, 193; *Ivigtut*, deposit, 146

Cryptomelane, *Madhya Pradesh*, X-ray, 20

Cryptoperthite, *Italy*, 50

Crystal chemical calculations, 4

Crystal growth, cleavage in domain crystal, 75; computer model for binary systems, 249; concentration of solution near crystal, 104; dendritic-skeletal in ores, 334; dislocation-strain energy, 334; kinetics of calcite nucleation, 284; kinetics of growth twinning, 249; mechanism for ionic crystals, 282; morphology during dissolution, 75; nucleation of new phase under tension, 283; of spherical crystals, 249; order-disorder kinetics in quasi-binary crystals, 283; order of nucleation in magma, 67; origin of dislocations, 24

Crystalline complexes, 62, 332

Crystallization from fluid phase, book, 88

Crystallochemical classification of minerals, book, 7

Crystallography, book, 172; classification of crystal habits, 333; history, 178; morphology of rutile-type structure, 333; OD & VD structures, 178

Crystals, acoustic thermic analysis, 104; cubic, elastic constants, 249; cubic, equilibrium shape, 249; cubic, lattice energy, 249; determination of orientation in aggregates, 3; single, alloying in vacuum, 104; single, grade quality of worked surface, 104; single, seminar, 104; symmetry & piezoelectric properties, 251; theory of elastic waves, book, 88; uniaxial crystals, longitudinal & transverse constants, 251

Crystals, minerals, & rocks, book, 6

Crystal structure, 14, 93, 177, 265; analysis of aggregates, 169; coordination & bonding, 178; coordination theory, 266; dislocations in ionic crystals, 334; frameworks from four- and eight-membered rings, 93; interband Faraday rotation in oxides, 14; metrics of triclinic crystals, 14; mixed-layer minerals as one-dimensional crystals, 14; order-disorder in ionic non-stoichiometric crystals, 265; Patterson diagrams for orthorhombic system, 14; possible layer stacking structures, 265; representation of inorganic close-packed structures, 14; solution of disorder problems, 177; stereographic projection from Kikuchi pattern, 83; strength of bonding forces, 265; uneven surface on perfect crystals, 258; use of Polaroid-Land cassette, 169; volume ratios in twins, 93

Csádi mountain v. Hungary

Cuba v. West Indies

Cubanite, Mössbauer effect, 95; phase relations, 106; rotation properties, 145

Cubic crystals, elastic constants, 249; equilibrium shape, 249; lattice energy, 249

Cucuron v. France

Cuillins, Inverness-shire v. Scotland

Cumberland v. England

Cumbres-Mayores v. Spain

Cumsmingtonite, synthesis & stability field, 288

— grunerite series, crystal-field phenomena 177; Mössbauer effect, 177, 266

Cumulates, ultramafic rocks, 227; *Transvaal* 235

Cuprosklodowskite, *Katanga*, opt., X-ray, 54

Cuspisidine, acicular, 8; *Honshu*, 139

Cuvier, North Island v. New Zealand

Cyclic sedimentation, book, 88

Cyclothem, *Bristol*, 154; *Portugal*, U, Cu in, 36

Cylindrite, identification, 141

Cymrite, California, comp., 221

CYPRUS, pyrite ores, volcanism, 17, 182

Troodos, pyrite ore, 274, ultrabasic volcanism assemblage, 227

Cyrilovite, Portugal, X-ray, d.t.a., 252

Cyrtilite, Kazakhstan, S in, 53

Czerniawa Zdroj v. Poland

CZECHOSLOVAKIA, cassiterite, 337; diamantiferous diatremes, 22; mineralogical & geological bibliography, 173; schists, granitoids, ultramafic rocks, 63; *Bohemia*, age of plutonic rocks, 272, gorceixite in phonolite, 78, granites, 315, magnetism of cassiterite, 276, tektites, 44, topographic mineralogy, 252; *Bohulin*, calcites, 57; jalpaite, 222, Pb-Zn ores, 184; *Ceské Středohoří*, pyrope peridotite, basement rocks, 62; *Ceský Les mts.*, peridotites, serpentines, 62; *Cínovec*, ores, minerals, 19, Sn-W ores, 188; *Ferro, Dobina*, gersdorffite, 181; *Háje*, bismutoferrite, 53

Horní Rotava, bismutoferrite, 53; *Jáchymov* (*Joachimsthal*), bismutoferrite, 53; pitchblende, 198; *Jihlava*, ore veins, 271

Komáří, Moravia, strontian chabazite, 52

Krasnó, Sn greisen ores, 188; *Krapkowice*, molybdenite, feldspar, 19, 100; *Krušné hory*, granite contacts, Sn-W ores, 276

Letovice, Moravia, ultrabasic rocks, 62

Lhenice, Bohemia, moldavite, 44; *Marškov*, *Moravia*, chrysoberyll-sillimanite pegmatite, 63; *Medzev, Košice*, slavíkite, 313

Mendene mine, Erzgebirge, skarn rocks, ores, 132; *Mirošov, Strážek*, chlorite after axinite, 49; *Moravia*, garnets, 216

minerals, 88, ultrabasic rocks, 62; *Náhlov*, garnets, 332; *Nízké Tatry mts.*, *Slovakia*, Sb minerals, 101; *Palád*, *Moravia*, natrolite, 52; *Příbram*, calcite, 57; *Přísečnice, Krušné hory mts.*, garnets, 216; *Ransko, Bohemia*, minerals in 78; *Smrkovce*, bismutoferrite, 53; *Spisské Gemer mts.*, siderite minerals, 20; *Tempo*, *Štějn, Moravia*, natrolite, 52; *Věžná*, *Moravia*, ferroan phlogopite, Mg-vermiculite, 11, 137; *Ziar, Hron, Slovakia*, cristobalite, montmorillonite, 245; *Zulové Súdety*, granitoids, silicate-rich marble, 7

Dacite, melting & crystallization, 287; *Antarctica*, 323; *Halle*, 233; *Oklahoma*, 65

Sardinia, 61; *Serbia*, comp., 319

Dagestan island v. Korea

Dagestan v. Russian SFSR

shellite (carbonate-apatite), synthesis, 26; *Mexico*, 244

shear *Hollow lake v. Tennessee*

shenite, *Siberia*, anal., opt., X-ray, 222

sherasun, *Siberia v. Russian SFSR*

sheeling hills *v. India*

sheathmoor, *Devon v. England*

shear, *Tasmania v. Australia*

shekesan *v. Azerbaijan SSR*

sheelite, structure, 267; *Crimea*, anal., opt., X-ray, d.t.a., 46; *Kureyka river*, X-ray, d.t.a., 133

shebréelite, in meteorite, 210; zincian, in chondrites, 299

shebonite, IR spectrum, 224; *Colorado*, in oil shales, X-ray, 58; *New South Wales*, 163

sheyton *v. Ohio*

shead Sea *v. Israel*

she Beers mine, *Cape Province v. South Africa*

shecollatura basin *v. Italy*

sheep-sea cores, carbonareous fractionation, 117; *NaCl* in, 327; *Pacific*, spectrography, 202

sheep Springs lake *v. California*

sheer isle *v. Maine*

sheer Mössbauer effect, 177; *California*, low spin ferrous iron, 76

sheformation, *Pennsylvania*, of fossils, rocks, 72

shehydroxylation processes, 289

shekesa *v. Congo*

sheleafosite, formula, 141; Mössbauer effect, 15; *Sverdlovsk & Nevada*, comp., 141

shefia deposits, *Sweden*, Precambrian, 155

shemiritepe-Qavdar *v. Turkey*

sheocrat creek *v. Colorado*

sheenmark, weathering of concrete, 7; *Bornholm*, granitoid rocks, 161

sheensity, continuous separator, 169; of minerals & related substances, 145; *Bornholm*, of granitoid rocks, 161; *South Africa*, of rocks, 253

sheerbyshire *v. England*

sheernburg, *South-West Africa v. South Africa*

sheescloizite-pyrobelonite group, 128

sheesbogoe *v. Brazil*

sheerst zone soils, *USSR*, book, 173

sheetrital sediments, genetic model, 69

sheeterium, in rain & ground-waters, 40; *Alps*, in waters, 40

sheeva *v. Romania*

sheevile *v. California*

sheeweylite = mixture, 307

sheezhnev, *Soviet Far East v. Russian SFSR*

shehanras *v. India*

shehanrasite, *Bihar*, X-ray, 303

sheibase, equation of state, 250; Eu in minerals, 292; two groups, 68; *Apeninnes*, splititic, comp., 68; *Dalarna*, 146; *Genoa*, hydrothermal alteration, 246; *New South Wales*, alkaline, comp., 64; *North Carolina*, 151; *Pilanesberg*, hybrid origin, 239; *Prato*, sills, pillow-lavas, 61; *Sauerland*, with carbonate, 68; *Siberia*, rare-earths in, 35; *Turkey*, 322; *Virginia*, 151; *Voronezh*, comp., 320

sheialeite, synthesis, X-ray, 284

sheogenesis, in sediments, book, 88; mobility of minor elements, 204

sheiallage, *Prato*, in ophiolitic rocks, 62

sheiamond, abraded surfaces, 335; absorption emission systems, 76; brilliant-cut, 31; causes of birefringence, 76; C isotopes in, 201; Compton profile, 249; covalent bond, 182; dispersion, 196; growth from multi-component systems, 334; growth hillocks, 190; heat of combustion, 190; impact strength, 160; in diatremes, 22; in meteorites, 44, 45; lattice dynamics, 182; N in coat, 139; photoconductivity, thermoluminescence, 251; plastic deformation,

335; preservation in kimberlite pipe, 54; pressure & plasticity, 250; pressure cracks, 160; solid inclusions, 334; spectra & defect centres, 251; synthetic, 75; world resources, 22; zero-phonon line, 251; *North America*, 196; *South Africa*, graphitized, 222; *South-West Africa*, 22; *United States*, in drift, 164; *Yakutia*, etch patterns, 335, geophysical prospecting, 102

sheiaspore, in bauxite, X-ray, 55

sheiatomaceous earth, *Slovakia*, contact-altered, 245

sheiatomite, *Ontario*, comp., 18

sheiatoms, Ba in, 117

sheiatremes, diamantiferous, 22

sheidrite, dehydroxylation, 174; glow curves, 89; *Kansas*, in limestones, 11; *Walbrzych*, in volcanic rocks, anal., 11

sheinacrite, complex with NH_4Cl , 90

sheifferential thermal analysis *v. thermal*

sheifferentiation, *New South Wales*, of magma, 65

sheigenite, defect equilibria, 27; stability, 26; synthesis, 285; *Zambia*, 274

sheike rocks *v. dyke rocks*

sheiospide, absorption spectrum, 94; electron paramagnetic resonance, 94; formed from tremolite, 29; mechanical twinning, 24; star, 196; *Altai*, comp., opt., 47; *Banat*, comp., X-ray, 245; *Kondapalli*, in clinopyroxene, 46; *Lower Silesia*, in alteration zone, 320; *Minas Gerais*, in bebedourite, opt., age, 236; *Quebec*, comp., opt., 46, in sedimentary xenolith, 138; *Sahara*, in pyroxenite, anal., opt., 47; *Siberia*, blue, comp., 217; *Synnyr*, from skarn, opt., 330

sheiospide-hedenbergite series, crystal-field phenomena, 177

sheiorite, *Antarctica*, age, 166; *California*, age, 168; *Koryak mts.*, comp., 233; *Pyrenees*, zircon habit, 315; *Richtersveld*, dyke rocks, 236

shein, quartz, *Antarctica*, comp., 67; *Ciscau-casia*, with skarn zone, 246

sheioritic rocks, *Chile*, 66

sheislocation-strain energy, 334

sheisterrite, 137

sheisthene *v. kyanite*

sheitráu (*Ditro*) *v. Romania*

sheizownville *v. Pennsylvania*

shejbel Ank *v. Tunisia*

shejurleite, 296; stability, 26; structure, 270; twinning, 270

sheineper (*Dnepr*) *v. Ukrainian SSR*

sheineper-Donets basin *v. Ukrainian SSR*

sheinester *v. Ukrainian SSR*

sheoberug *v. Germany*

sheobrogea *v. Romania*

sheolcoath mine *v. England*

sheolen *v. Bulgaria*

sheolerite, geochemical comparisons, 200; hydrothermal leaching, 107; *Antarctica*, 323; *Donegal*, with dendritic augite, 47; *Finistère*, comp., 318; *Kharayelakh mts.*, 150; *Khuperi mt.*, in differentiated intrusion, 150; *Mysore*, dykes, comp., 150; *Siberia*, thermal study, 229, with fused sandstone veins, anal., 156; *Tasmania*, gravity survey, 67; *Transkei*, dyke, comp., 253; *Venezuela*, sills, 333

shein, oligoclase, *Mysore*, comp., 322

shein, quartz, *Durham*, 147

sheolomite, dissolution, 27; FeCO_3 content, 27; from carbonatite, comp., 36; genesis, book, 9; identification, 259; influence of silica on formation, 224; IR absorption, 224; separation from sediments, 84; standard, comp., 32; synthesis, 27; synthesis, X-ray, 192; *California*, sedimentary & detrital formation, 241;

sheorham, Permian, 147; *Hokkaido*, veins in serpentine, X-ray, 142; *Illinois*, quarrying, 241, thermal expansion, 250; *Libya & Germany*, Ca excess, 57; *Metalliferous mts.*, fluid inclusions, 275; *Michigan*, co-existing with calcite, Sr, Mn in, 142; *Norway*, in carbonatite, 291; *Pyrenees*, siliceous, metamorphosed, 332; *Siberia*, in carbonatite, 326; *Sweden*, comp., 101, 246; *Thuringia*, 328

shein-calcite rocks, *Ottawa*, intrusive, 66

sheolomites *v. Italy*

sheolomitic rocks, *Poland*, secondary origin, 71; *Silesia-Cracow*, comp., d.t.a., 154

sheolomitization, *Causses & Montagne Noire*, 38

sheolour island, *New Guinea v. East Indies*

sheome Rock mine, *South Australia v. Australia*

sheominican Republic *v. West Indies*

sheominion reef, *Transvaal v. South Africa*

sheonbas v. *Ukrainian SSR*

sheonegal *v. Ireland*

sheonets v. *Ukrainian SSR*

sheongri Buzurg *v. India*

sheorchester mine, *New Brunswick v. Canada*

sheovite, *Bavaria*, habit, 216; *Tottori*, comp., opt., X-ray, 304

sheoreislar *v. Germany*

sheorecea mts. *v. Romania*

sheorug *v. India*

sheorzhkovka-Konstantinovka *v. Ukrainian SSR*

sheots-1 (dunite), comp., 32; Cr in, 171; Cu, Ga, Zn in, 86; Sb in, 259

sheublabera *v. India*

sheufrenoysite, rotation properties, 145; structure, 270

sheuke island *v. Alaska*

sheuluth *v. Minnesota*

sheumfriesshire *v. Scotland*

sheumortierite, opt., 196

sheunite, equation of state, 250; Ni isotopes in, 301; preferential leaching, 201; *Caucasus*, Sc in, 200; *Minas Gerais*, 236; *Norway*, 228; *Siberia*, with nodular chromite, 237; *Sierra Leone*, 234; *Washington*, 228

sheüppenweiler *v. Germany*

sheurance isthmus *v. France*

sheurbachite, *Czechoslovakia*, 318

sheurham *v. England*

sheust, *Barbados*, wind-borne, 42

sheyle rocks, intrusion temperature of peridotite, 59; *Aar*, in granite complex, 231; *Alto Vicentino*, basic & ultrabasic, 232; *Colorado*, of carbonatite, 66; *Genoa*, porphyritic, altered, 246; *Hebrides*, tholeiitic, metamorphosed & deformed, 246; *Iceland*, magnetism, 337; *Israel*, kaolinated, comp., 156; *Kazakhstan*, composite, 152, intraore, 149; *Mysore*, basaltic, comp., 150, of dolerite, comp., 150; *Noril'sk*, differentiated, 238; *Norway*, magnetism, 166; *Rhine*, diabasic, comp., 62; *Richtersveld*, 236; *Sardinia*, 231; *Sierra Leone*, 234; *Stanovoy range*, of porphyry, comp., 149; *Transkei*, pegmatitic dolerite, 235; *Uganda*, alkaline, 64; *Ukraine*, lamprophyric, 149

shezel gutan *v. Tadzhik SSR*

shezheskazgan *v. Kazakh SSR*

shezheskazganite, *Dzhezkazgan*, experimental leaching, 187

shezhida river, *Siberia v. Russian SFSR*

shezhidinsk, *Siberia v. Russian SFSR*

shezhumart *v. Kazakh SSR*

shezhylkydal, *Siberia v. Russian SFSR*

shezirul *v. Georgian SSR*

sheakring, *Nottinghamshire v. England*

Earth, abundance of Rb, K, Sr, 197; breakdown of albite at depth, 288; diffusion of elements under gravity, 197; intensity of geomagnetic field, 80; model for Chandler wobble, 253; Wernerian theory, 314

Earth history, map, 338

Earthquake mechanism, 339

Earth's crust & mantle, anisotropy of olivine in upper mantle, 160; composition, 32; composition of upper mantle, 228; compressibility at mantle-core boundary, 335; explosive phase transitions, 32; geochemical comp. of upper mantle, 145; K, Rb in mantle-derived rocks, 228; K, Rb, Sr in, 290; lanthanides in, 42; magmas formed by zone melting, 194; mantle convection, 339; mantle convection & mid-ocean ridges, 253; Mg in upper mantle, 298; mineralogy of mantle, 228; mineralogy of principle components, 196; mineral reactions in mantle, 194; olivine-spinel transition, 339; periodicity of background ratios, 326; phase transitions of enstatite in mantle, 282; pyroxene-garnet transformation in mantle, 287; Rb, Sr in mantle, 228; structure & development, 68; transitional types under small ocean basins, 253; upper mantle & alkaline magmas, 324; upper mantle & genesis of ultrabasics, 145; Black Sea trough, structure, 145; Pacific, book, 261; South Australia, gravity survey, 339

Eastern Ghats *v. India*

EAST INDIES, INDONESIA, volcanism, ignimbrites, 326; Billiton, cassiterite placers, 276, igneous rocks, 322; Klappa Kampit hill, Billiton, Sn ores, 276

—, NEW GUINEA, lavas, 64; radiocarbon dating, 81; Cape Vogel, Papua, clinostatite, 134; Dolur island, lavas, 64; Fergusson island, lavas, 65; Papua, lavas, 64, radiocarbon dating, 81

—, PHILIPPINES, Mn ores, 279; tektites, 44; volcanic ash soils, 265; Taal, volcanic eruption, 239; Acupan mine, tellurides in Au ore, 278; Luzon, Cu ores, 298; Surigao, laterite transition zone, 295; Thanksgiving mine, Mountain province, sulphide ores, 274

East Kungey *v. USSR*

East Ongul island *v. Antarctica*

East Pacific rise *v. Pacific Ocean*

East Sayan, Siberia *v. Russian SFSR*

Echinoderms, C, O isotopes in, 116

Eckermannite, synthesis, opt., 288

Eclorite, equation of state, 250; K/Rb in, 295; mineral equilibrium in, 330; nodules in kimberlite, 30; quartz, partial melting, 287; roles of magnetite & acmite, 287; three types, 159; transition from basalt, 242; Africa, comp. of garnet, 45; California & New Caledonia, comp., 159; Guatemala, comp., 47; Norway, with barroisite, comp., 47; Switzerland, 318; Ukraine, xenoliths in lamprophyre, 149; Urals, with quartz grains, 158; Venezuela, 249; Yukutia, comp., 216; xenoliths with pyroxene, 305

Ecloritic rocks, classification, 62; jadeite component in, 330; S isotopes in, 39; Italy, garnets in, 247

Economic Geologists, Society, 96

Economic minerals, 17, 96, 182, 271; Illinois, 182

Ecton, Staffordshire *v. England*

Ecu basin, Western Australia *v. Australia*

Edward lake *v. Africa*

Effusive rocks v. volcanic rocks

Edge *v. Nigeria*

Egypt (U.A.R.), Fe ores, 102; ilmenite ore, 189; Precambrian ores, minerals, 183; Aswan, Fe ore, 101; Safaga, phosphates, 188; Suez, Precambrian rocks, 7

Eh-pH equilibrium diagrams, 290

Ehrenfriedersdorf *v. Germany*

Einasleigh, Queensland *v. Australia*

Eliteite, structure, 270

Ekanite, structure, 177

Elastic waves in crystals, book, 88

Elba *v. Italy*

Elberton *v. Georgia*

Electrochemical geothermometer, 103

Electroconductivity, of albite, basalt, 31

Electron bombardment, of talc, chlorite, muscovite, 288

Electron-hole centres, in minerals, 265

Electron microprobe analysis, 79; computer processing, 84; epoxy impregnation, 170; inclusions in ore minerals, 5; meteorites, 87; rocks, 86

Electron microscopy of clay minerals, book, 88

Electro-osmotic core cutting, 170

Electroporcelain, microstructure, 8

Elements *v. chemical elements*

Elements of mineralogy, textbook, 261

El Gassi *v. Africa*

Elgin, Morayshire *v. Scotland*

Elgon *v. Uganda*

Ellsworth Land *v. Antarctica*

El Maden *v. Algeria*

El Paso Co. *v. Colorado*

Emel'dzhak, Siberia *v. Russian SFSR*

Emerald, synthetic, 31; Austria, 196

Emery Co. *v. Utah*

Emission spectrography, of alkali metals, F, 260; of minerals, 5; of rocks, 87

Emission spectrometry, 260

Emplectite, 79; Algeria, 18; Germany, 77

Enargite, Algeria, anal., 18; Wallis, 185

Enderbite, India, comp., 322; Madras, almandine, biotite in, 303; Sivasamudram, comp., 157

Endiopsiside, Kondapalli, in websterite, 46

Endogenous rocks & deposits, 9

Engineering geology, effect of clay, 261

ENGLAND, age of Whin sill, 2; authigenic silica in Penrhyn sandstone, 71; Keuper Marl, 13; medieval brick materials, 93; Dolcoath mine, fluorite, 313; Lake District, lake sediments, 242; Midlands, groundwaters in limestone, 119; Peninie coalfield, carbonate band, 202; Southwest England, alkalis, silica, Mg, Fe in granitic rocks, 35

—, CORNWALL, pharmacosiderite, 271; Geevor mine, greisen, feldspar, granitic rocks, 188, Sn lodes, 187; Kynance, Lizard, mackinawite, 77; Land's End, granite, 68; Perran bay, altered Fe lode, 184; St. Austell, Fe in kaolinite, 10; St. Minver, kaersutite, 218; Treamble, kaolinitic clay, 184

—, CUMBERLAND, anhydrite, 242; Alston, galena, 334; Greenside mine, ore shoots, 97; Roughton Gill, plumbogummite, hinsdalite, hidalgite, 58

—, GLOUCESTERSHIRE, ground-waters in limestone, 119; Triassic mineralization, 185; Castleton, glauconite, 307; Golconda mine, Brasington, galena, baryte, 21; Midway, Swadlincote, minerals, 185

—, DEVON, Dartmoor, rapakivi granite, 67; Start, zircon in schists, slates, 241

—, DURHAM, coalfield, igneous rocks, limestone, 147; Sherburn hill colliery, galena, 334; Weardale, rare-earths, fluorescence of fluorites, 56; West Hartlepool, geology, Mg from sea-water, 147

—, GLOUCESTERSHIRE, Ashton Park, Bristol borehole in limestone, 154

—, LEICESTERSHIRE, minerals, 77; Moun sorrel, amino acids in bitumen, 199

—, NOTTINGHAMSHIRE, Eakring, borehole in oilfield, 147; Kirton, brick clay, 147; Ollerton, coalfield, oil, sediments, lava 147

—, SHROPSHIRE, Church Stretton, geology 173

—, STAFFORDSHIRE, Westphalian tonstein 11; Ecton, serpierite, 252

—, YORKSHIRE, diagenetic Fe minerals in borehole, 155; Balderhead dam, shale, 165; Scarborough, gas in Zechstein, 189

Enisei (Yenisei), Siberia *v. Russian SFSR*

Enstatite, absorption spectrum, 94; formed from talc, 288; from garnet peridotite, anal., 30; in achondrites, 299; in meteorite comp., 210; phase transitions, 282; polytypic with clinoenstatite, 32; Atlantic, in mylonite, 67; Kondapalli, in orthopyroxenite, 46; Pamirs, anal., opt., X-ray, 46

Styria, in ultramafic massif, 232

Ephesite, Postmasburg, comp., X-ray, 307

Epidiotite, Singhbhum, trace elements near Cu lodes, 112

Episodes, Aar, comp., 247

Epidote, radial glomeroblasts, 73; structure 177; Bihar, at schist contact, opt., 46

Connemara, anal., opt., 134; Crimea, opt., X-ray, 304; Czechoslovakia, in skarn rocks, anal., opt., 132; Gujara in skarn, opt., 46; Kola, rare-earth in comp., opt., 133

— group, Mössbauer effect, 177

Epigenesis, book, 7

Epistilbite, Iceland, comp., structure, 95

Epinolite, structure, 16, 182

Eplény *v. Hungary*

Epoxy impregnation, 170

Epsomite, morphology during dissolution 75; X-ray, 314

Equilibrium index, 89

Eramikami mine, Hokkaido *v. Japan*

Era mine, Hokkaido *v. Japan*

Eravna, Siberia *v. Russian SFSR*

Eriolite, altered to kaolinite, 289; structure 95; Niigata, in altered basalt, comp., opt., X-ray, IR, 221

Eromanga, Queensland *v. Australia*

Erongo, S.-W. Africa *v. South Africa*

Erselli *v. Italy*

Erzgebirge *v. Germany*

Erzincan *v. Turkey*

Esperite, synthesis, X-ray, 286

Espinhaço mts. *v. Brazil*

Essexite, Scotland, Ti in augite, 35

Ethiopia, Melca-Guba, Borona, accessory minerals in granite, 68

Etindite, Serbia, comp., 319

Etna, Sicily *v. Italy*

Ettringite, kinetics of crystallization, 8 Israel, 245

Euboea island *v. Greece*

Eucairite, rotation properties, 145

Eudialyte, Khibiny, with villiaumite inclinations, 63; Khibiny & Lovozero, Ce separation, 116

EUROPE, age of archaeological sites, 3; age of Pleistocene deposits, 167; algal reefs Carboniferous, 189; geological evolution 339; minor elements in carbonatic minerals, 36; ophiolites in Dinaric geosyncline, 319; trace elements in basaltic tuffs, 292; Alps, age of micas, 16; deuterium in waters, 40, K/Rb in igneous rocks, 34; Bohemian massif, corrosion of garnets from peridotites, 62; elements in peridotite minerals, 62, F in lamprophyre

EUROPE, (contd.)
 lamproid rocks, 293; garnets, 216; geology, stratigraphy, volcanism, plutonism, 332; inclusions in garnets, 62; K/Rb in magmatic rocks, 34; Pb isotopes in galenas, 183; peridotites, eclogites, granulites, 62; pyrope peridotite, 62; Sn ores, 189; *Baltic Sea*, age of beach, lagoonal deposits, 3; sulphides in shale, 202; *Baltic shield*, alkaline magmatism, 229; *Carpathians*, Rb, Ti, Br in potassium deposits, 294; *Carpatho-Balkans*, crystalline rocks, 333; *Gulf of Bothnian*, Fe, Mn, P in concretions, 117; *Serbo-Macedonian massif*, crystalline rocks, 333; *European*, in minerals, 292

Eutaxite, *Canary islands*, 63

Euxenite, heterogeneity, 33

Evaporite deposits, *Alsace*, 280; *Germany*, Br in, 39; S isotopes in, 297; *Nova Scotia*, 153; *Siberia*, 280; *Stassfurt*, solution metamorphism of carnallite, 39; *Volograd*, Sr in, 117

Exogenetic rocks & deposits, 9

Experimental mineralogy, 24, 103, 191, 282

Experimental technical mineralogy, 7

Extrusive rocks *v.* volcanic rocks

Fabrics *v.* petrofabrics

Faeröe (*Faeröe*) islands *v.* Atlantic Ocean

Fall river *v.* Colorado

Falun *v.* Sweden

Fatty acids, in Green River formation, 295; *Persian Gulf*, in sediments, 203

Fayalite, melting curve, 194; synthesis, 286; anal., opt., 215; *Mie*, anal., opt., thermal expansion, 131; *Norway*, in mangerite, 316

Feidjet el Mouley *v.* Algeria

Felch creek *v.* Colorado

Feldspar, age from dispersion of birefringence, 83; classification, 79; experimental weathering, 30; Fe in, 199; gases in inclusions, 199; heterogeneity, 33; high-pressure deformation, 302; H₂O, CO₂ in, 260; in ceramic industry, 173; O isotopes & cation exchange, 110; orientation in magmatic rocks, 229; paragenesis with nepheline, 283; paramagnetic resonance of Fe, 15; reaction with ground-waters, 205; reciprocal lattice angles, 51; reflectance spectrum, 58; Sr, Rb in, 259; staining test, 170; structural formulae, 84; structure, 93; temp. of crystallization in nepheline rocks, 283; twin optics, 137; use in geothermometry, 50, 283; *Antarctica*, age, 1; *Azov*, Ga in, 200; *Baltimore*, weathered to halloysite, 12; *Black Forest*, inclusions in, 319; *Canada*, optical heterogeneity, 51; *Flamanville*, rapakivi in granodiorite, 308; *Galway*, in granite, opt., X-ray, 50; *Ghana*, comp., 289; *Italian Dolomites*, replacement structures, 232; *Karamazar*, In, Ti in, 200; *Karelia*, Be, Pb, Ba, Sr in, 199; *Krušne hory*, pegmatite deposit, 19; *Montana*, hydrothermal alteration in granodiorite, 98; *Mozambique*, from pegmatites, K, Rb, Ca, Sr in, 220, X-ray, 220; *North Carolina*, resources, 281; *Ruhengeri*, replaced by calcite, 188; *Urals*, coexisting with nepheline, comp., 283; *Yakutia*, in granitic xenoliths in dykes, 219; alkali, comp. & structure, 308; crystallization in syenitic magma, 50; crystallization under non-equilibrium conditions, 137; homogeneity, X-ray, 219; mixed crystals, 14; resistivity, 77; thermal diffusivity, 250; X-ray determination of structure, comp., 308; *Ascension island*, liquid inclusions in, 34; *Norway*, Pb in, 50;

Scotland, in syenites, comp., X-ray, 147; *Switzerland*, from gneiss, triclinicity, 51; *Uruguay*, generations in druse, 66; *Vosges*, in granite, comp., X-ray, 50; *Wyoming*, formed from analcite, 309

—, K-, existence of two species, 14; in carbonatite, kimberlite, 30; isomorphous replacement, X-ray, 309; Rb, Pb in, 219; staining technique, 84; *Argentera*, in anatexites, 248; *Bushveld*, with dispersed optic axes, 245; *China*, in metamorphic rocks, 249; *Connemara*, in gneiss, opt., X-ray, 50; *Kii peninsula*, in porphyry, anal., 151; *North America*, coexisting with plagioclase, Pb in, 50; *Norway*, in augen gneiss, triclinicity, 50; *Siberia*, in metasomatic rocks, 50; *South Australia*, in gneiss, comp., 74; *Stanovoy Range*, zoned phenocrysts, opt., 219; *Switzerland*, opt., 51; *Wakayama*, 137

—, K-Ba, X-ray, 309

Feldspathic rocks, in alpine intrusive complexes, 228; *Malawi*, comp., 234

Feldspathoidal rocks, *Malawi*, comp., 234

Felsberg *v.* Switzerland

Felsite, *Rhum*, 230

Fen *v.* Norway

Fenite, *Alnö*, pyroxenes, 47; *Malawi*, comp., 234; *Siberia*, with moissanite, 54

Fenyőjö *v.* Hungary

Ferberite, structure, 271

Fergana range *v.* Kirghizian SSR

Fergusonite, *Synnýr*, mineral associations, comp., 234

Fergusonite, synthesis, 105; X-ray, 106; *Ibaragi*, comp., X-ray, 142; *Kazakhstan*, Sc in, 53; *Virginia*, X-ray, 106

Fergusson island, *New Guinea* *v.* East Indies

Ferrato *v.* Italy

Ferrera tunnel *v.* Switzerland

Ferraniante, synthesis, 288

Ferrierite, *Italy*, anal., opt., X-rays, 139

Ferrigabbro, *Queensland*, comp., 64

Ferrites, disorder, 15

Ferrithorite, zoned, 56

Ferro *v.* Czechoslovakia

Ferrocarpholite, *Calabria*, anal., 221

Ferrochlorite, *Valais*, 242

Ferrodiorite, *Skaergaard*, rare-earths in, 228

Ferroedenite, *Kagawa*, 135; *Yamaguchi*, comp., X-ray, 135

Ferrokaolinite, *Valais*, 242

Ferrromolybdenum, slag from smelting, 8

Ferropargasite, *Kagawa*, 135

Ferroricterite, *Yamaguchi*, comp., opt., X-ray, 135

Ferrosilicochromium, melting, 8

Ferrosilite, free energy of formation, 24

Ferrrovonsenite, 128

Fibres, synthetic, defects in, 8

Fiji *v.* Pacific Ocean

Filonicio *v.* Italy

Finite strain theory, 160

FINLAND, banded migmatite, 145; baryte, 143; ore Pb isotopes, 113; *Åland*, rapakivi granite, 67; *Haapaluoma*, *Pohjanmaa*, columbite, 312; *Kuhmoinen*, laumontite, 53; *Lammi*, laumontite, 53; *Mäntylharju*, perrierite, 162; *Parikkala*, crystallization temperatures of gabbro, 228; *Sukula*, *Tammela*, sulaite, 127; *Tampere*, meta-arkose, 246; *Tusby*, laumontite, 53

Fireclay, *Ishikawa*, X-ray, thermal analysis, 91; *Japan*, classification, 89

Fizelyite, rotation properties, 145

Flags, *Elgin*, 317

Flamanville *v.* France

Flinkite, structure, 271

Flint, banding, 241; *Connecticut*, 163

Flint-clay, *Hungary*, comp., X-ray, 176

Floras, *Washington & Idaho*, age, 1

Florencite, *Malawi*, opt., 235; *Verkhoyansk*, rare-earths in, 143; *Virginia*, 79

FLORIDA, kaolinite, 179; *Bone valley*, sand over phosphorite, 155; *Florida bay*, aragonite, calcite sediment, 27

Flörke-Saalfeld technique for diffractometry, 84

Flow experiments, 190

Fluellite, structure, 96

Fluochrysotile, *China*, anal., opt., d.t.a., t.g.a., 226

Fluorantigorite, *China*, anal., opt., d.t.a., t.g.a., 226

Fluorapatite *v.* apatite

Fluoride, *United States*, in ground-waters, 207

Fluorine, determination, 4, 85, 260; in fresh-water sediments, 37; in lamprophyre & lamprock rocks, 293; in metamorphosed hornfels, 40; in ultramafic rocks, 200; *Soviet Far East*, in ore-forming solutions, 20

Fluorite (fluor spar), binders for pellets, 23; comp., colour, 313; gases in inclusions, 198; hydrothermal growth, 106; in pegmatite, formation temp., 315; trace elements, UV, 56; U in, 56; *Bavaria*, in hydrothermal veins, 22; *Dniester*, colourized, comp., opt., 144; *Gujarat*, around carbonatite complex, 22, etch patterns, 335; *Illinois*, 244, resources, 23; in vugs in shale, 338; *Spain*, decrepitation, 22; *Tien Shan*, in veins, 156; *United States*, with liquid inclusions, 144; *Urals*, ore-bodies, 22; *Wardale*, Eu in, 56

— deposits, *Banat*, with baryte, 280; *Gissar range*, wall-rock orthoclasitization, 198; *Thailand*, 280; *Transbaikal*, formation temp. of baryte, 143

Fluor-mica, structure, 178

Fluoroberyllates, structure, 17

Fluor-phlogopite, synthesis, 110

—, Li, structure, 178

Fluorspar *v.* fluorite

Fluting structure, tectonic, 67

Flysch, *Apennines*, heavy minerals in, 242; *Switzerland*, heavy minerals in, 154

Foge *v.* Atlantic Ocean

Foote Mineral Company's mine *v.* North Carolina

Foraminifera, *Red Sea*, O isotopes in, 294

Forez *v.* France

Formosa = Taiwan

Fornacite, structure, 94, 271

Forsterite, formed from tremolite & dolomite, 29; *Kugli-Lyal mines*, anal., opt., 44; *Synayr*, from skarn, opt., 330

Fort Gouraud *v.* Mauritania

Fort Portal *v.* Uganda

Forty Mile river *v.* Alaska

Fossils, aragonite in, 241; C isotopes in, 118; *Dalmatia*, in bauxite, 175; *Illinois*, pyritized, 78; *Pennsylvania*, distorted & deformed, 72

Fox bay *v.* Antarctica

Foyaite, *Malawi*, comp., 234

FRANCE, bauxite, 23; halite, potassium salts, 280; sodalite, 95; *Abé-Ildut*, *Finistère*, granite, 151; *Aiguelon bay*, *La Rochelle*, amino acids in marine mud, 240; *Alsace*, potash deposits, 280; *Amélie-les-Bains*, clay minerals, 92; *Angoulême*, *Commanieu* sediments, 242; *Aquitaine*, clay, clay minerals, 37; *Argentat*, *Corrèze*, chlorite schists, 331; *Arve valley*, radioactive sands, 70; *Aston*, *Pyrenees*, zircons, 315; *Aston-Hospitalet*, zircons in gneisses, 303; *Aubrac mis.*, *Aveyron*, magnetization of lavas, 162; *Aude*, halite, 280; *Auvergne*, gonnardite, 221; *Ax-les-Thermes*, zircons

FRANCE, (contd.)

in granites, 303; *Ballon d'Alsace, Vosges*, granite, 318, tuffs, 317; *Barfleur, Manche*, submarine granite, 318; *Bas-Languedoc*, volcanic rocks, 230; *Baux*, clay minerals in bauxite, 175; *Bearvoir, Allier*, lepidolite albite, 148; *Beillard, Géradier*, age of peat, 257; *Belledonne, Alps*, altered volcanic rocks, 148; *Béziers, dolomites*, spilites, 318; *Bordères*, granitic rocks, 152; *Bourbonnais, Allier*, weathering on granite, 327; *Brittany*, age of sandstones, 257, Ag in gold nuggets, 100; *Bryeaud mine, Limousin*, Au ore minerals, 273; *Cadouin, Dordogne*, kyanite, 263; *Canigou, Pyrenees*, metamorphism of dolomites, 332; *Cantal*, pumice nappes, 317; *Carança, Pyrenees*, metamorphosed dolomites, 332; *Causses*, limestone-dolomite boundaries, 38, volcanic rocks, 230; *Cernon, Jura*, calcite, 337; *Châteaulin, Côtes-du-Nord*, chloritoid, margarite in schists, 331; paragonite in schist, 331; *Cigalère cave, Ariège*, gypsum, aragonite, 339; *Coirons plateau, Ardèche*, alluvial deposits, 93; *Colettes, Allier*, microcline, plagioclase, 137; *Cormeilles, Paris*, clay minerals, gypsum, 176; *Cottian Alps*, regional geology, 173; *Coustouges-Lamanère*, clay minerals, 92; *Cucuron, Vaucluse*, montmorillonite, attapulgite, 174; *Durance isthmus*, minerals in bauxite, 242; *Flamanville*, rapakivi granodiorite, 308; *Forez, Puy-de-Dôme*, structure of massif, 238; *Franche-Comté*, halite, 280; *Gardette, Isère*, lamellar quartz, 309; *Gigean, Lot*, volcanic rocks, 318; *Golfe du Lion*, radioactive beach sediments, 327; *Goutte, Lorraine*, Vosges, porphyritic dyke, 147; *Granès*, meteorite, 123; *Halouze, Orne*, oolitic Fe ore, 102; *Hérault*, halite, 280; *Héritier, Cantal*, labradorites, 318; *Hospitalet, Pyrenees*, zircons, 315; *Huelgoat*, laumontite, 53, volcanism, 318; *Jura, B*, Ga in clay, 202; *Languidou, Finistère*, augen gneiss, 247; *Liauzan-en-Olloix*, *Puy-de-Dôme*, native Se, Pb-bearing guilleminite, 139, Se minerals, 140; *Locmaria, Morbihan*, chloritoid, glauophane, 216; *Lorraine*, halite, 280, oolitic Fe ore, 278; *Las Cabesses, Ariège*, Mn in limestone, 38, todorokite, 312; *Le Chevade*, andesites, 318; *Lys-Caillaouas (Caillouas), Pyrenees*, granitic rocks, schists, 39, zircons in granite, 303; *Maritime Alps*, origin of sandstone, 328; *Martigné-Ferchaud, Brittany*, apatite in Fe ore, 313; *Mas Rouge, Baux*, gibbsite, pisolites in bauxite, 141; *Massif Central*, marble, 242; *May-sur-Orne*, biotite, anatase in sandstone, 218; *Melle, Deux Sèvres*, Pb-Zn ores, 21; *Menet, Cantal*, trachytes, 317; *Messéix, Auvergne*, volcanic ooliths, 328; *Mondane, Savoie*, fluid inclusions in albitites, 138; *Mont-Blanc*, Alpine metamorphism, 332; *Montagne-Noire*, age of granites, minerals, 1, limestone-dolomite boundaries, 38, structures in schists, gneiss, 237; *Montclar, Lot*, calcite, 337; *Mont-Dore*, age of volcanic rocks, 82, basaltic magma, rhyolitic magma, 68, Cr, Ni, Co in lavas, 293, pumice nappes, 317, trachytes, 317, volcanic rocks, 147; *Morvan*, granitic rocks, 318, migmatite minerals, 331; *Nontron, Dordogne*, crocoite, 162; *Normandy*, age of clays, sandstones, 257, Fe ores, 19; *Paris basin*, clay minerals, trace elements, 13, flint, chert in chalks, 153, kaolinitic-ferruginous clays, 92, montmorillonite, 264, origin of gypsum, 203,

palaeopodzol, 13; *Pays de Léon, Finistère*, age of gneisses, granites, 82; *Peyrebrune, Reumont*, spilitic lava flows, 61; *Pilat, Massif Central*, muscovite granites, 238; *Plancher-les-Mines, Haute-Saône*, granite in volcanic breccia, 318; *Plan de la Tour, Var*, granite, 317; *Poitou*, clay minerals, 92; *Portel, Aude*, saline inclusions in gypsum, 164; *Prat-de-Bouc, latites*, 318; *Provence*, halite, 280; *Puy-de-Dôme, Massif Central*, ash, pumice, volcanic minerals, 317; *Pyrenees*, altered cordierite, 304, low-pressure regional metamorphism, 331; *Palaeozoic*, crystalline rocks, 332, schists, 39, sericite in granite, 156, talc deposits, 330; *Quibou, Manche*, organic matter in phthomite, 294; *Redon*, quartz keratophyre, 317; *Rhône river*, trace elements in water, 204; *Rieussec, Hérault*, calcite, 337; *Rosiers*, voltzite, 57; *Roucroux, Isère*, ignimbrites, in grit 328; *Sagnette, Cantal*, pegmatoids, 317; *St. Maurice-Chateauneuf*, granite, 230; *St. Pierreville, Massif Central*, microgranular rocks in granite, 331; *Salette mts.*, gneiss, 157; *Salsigne, Au* veins in sandstone, 278; *Salsigne mine, Au*, associated minerals, 100; *Schaenzel*, U in coal, 38; *Sèvre river*, montmorillonite, 92; *Sidobre*, granite, 169; *Sorézois, Montagne-Noire*, augen gneiss, 73; *Suresnes*, bacterial origin of sulphuric acid, 203; *Téron gorge, Massif Central*, charnockites, granulites, 156; *Valle de Aran*, zircons in granite, 303; *Varennes, Auvergne*, granite, 283; *Véranne, Massif Central*, microgranular rocks in granite, 331; *Vébre, Ariège*, ophite, 231; *Velay*, granulites, charnockites, 247; *Vendée*, clay minerals, 92; *Vosges*, perthitic orthoclase, 50

Francevillite, Ba-, anal., opt., X-ray, d.t.a., 55

Franche-Comté v. France

Franckeite, identification, 141

Francolite, IR spectrum, 224

—type mineral, *Silesia*, coating basalt, X-ray, 78

Franklin v. New Jersey

Freetown v. Sierra Leone

Freiberg v. Germany

Freital-Döhlen v. Germany

French Guiana v. Guiana

Fresnoite, IR absorption, 94

Front Range v. Colorado

Frood, Ontario v. Canada

Froth flows, Kenya, 59

Fryxell lake v. Antarctica

Fuchsite, *Skye*, from ultrabasic rock, anal., 60; *Styria*, 338

Füllöppite, rotation properties, 145

Fumarole, *Indian Ocean*, 326

Furnaces, high-temperature materials, 104; open-hearth, 8

Furutobe mine, Honshu v. Japan

G-1, Al, Fe in, 85; comp., 290; In in, 260; Mo, Sn, Pb, W in, 198; P in, 172; Sr, Rb in, 259

G-2, comp., 32; Mg in, 5; Mn in, 172; V in, 85

Gabbro, reaction with magmas, 326; *Aar*, hornblende, comp., 247; *Aberdeenshire*, depth of crystallization, 60, gravity & magnetic surveys, 161; *Antarctica*, complex with xenoliths, 67, hornblende, comp., 67; *Atlantic*, magnetism, 230; *Bushveld*, with inclusions of carbonate rocks, 245; *Carpathians*, 319; *Caucasus*, Se in, 200; *Finland*, crystallization temp., 228; *Finnmark*, 146; *Norway*, field relations, 146; *Prato*, 61; *Pyrenees*, comp., 152; *Queensland*, olivine, comp., 46; *Scotland*, with pelitic xenoliths, 153; *Siberia*, rareearths in, 35; *Skaergaard*, rareearths in, 228; *Sondalo*, with olivine facies, 239; *Tasmania*, age, 1; *Turkey*, 322

—amphibolite, *Hokkaido*, 150

—diabase, *Noril'sk*, reaction with aqueous solutions, 112

—diorite, *Germany*, hypabyssal, 229

—dolerite, *Noril'sk*, in differentiated dyke, 238; Ni in, 114

—noritic rocks, *Kasai*, 322

—peridotite, *Urals*, accessory minerals, 7

Gabbs v. Nevada

Gabon, Ag in Au nuggets, 100; kaolinites, 92; *Cape Lopez*, Fe ooliths, 102

Gabrielsonite, *Långban*, anal., X-ray, 128

Gadolinite, structure, 267

Gageite, *New Jersey*, X-ray, 221

Gahnite, *Nigeria*, X-ray, 15; *Rhodopes*, in pegmatite, anal., 144

Galaxite, *Iwate*, intergrown with hausmannite, X-ray, 55

Galena, Bi, Ag, Sb in, 4, 222; crystal growth, 334; dendritic-skeletal in ores, 334; identification, 259; microhardness, 75; miscibility with pyrite, 285; synthesis, 285; thermo-electromotive force effect, 161; *Aar*, 247; *Azon*, Pb isotopes in, 33; *Bohemian massif*, Pb isotopes in, 183; *British Columbia*, radiogenic component of Pb, 1; *Denbighshire*, 162; *Japan*, electron microscopy, 160; *Karamazar*, In, Ti in, 200; *Khibiny*, oxidation products, comp., 253; *Limburg*, isotopes in, 256; *Norway*, X-ray, 98; *Silesia*, trace elements in, 291; *Spain*, pseudohexagonal, 222; *Turkey*, 273, Pb isotopes in, 168

—baryte ore, *Derbyshire*, 21

Galena hill, Yukon v. Canada

Galenobismutite, rotation properties, 145

Galicia v. Spain

Galilee v. Israel

Galinskij, Siberia v. Russian SFSR

Galinskoye v. Russian SFSR

Gallite, 94

Gallium, determination, 86, 207; in meteorites, 211, 212, 301, 302; *Azov*, in granitoids, 200; *Crimean mts.*, in rocks, 115; *India*, in bauxite, 295; *Jura*, in clay minerals, 202; *Soviet Central Asia*, in Pb-Zn ores, 33

—compounds: electric current in GaAs, 104; synthesis of GaAs, 104; synthesis of magnetoplumbite analogue, 192

Galloway v. Scotland

Gallura, Sardinia v. Italy

Galway v. Ireland

Ganophyllite, Caernarvonshire & Maine, 314; *Shikoku*, in Fe-Mg ores, anal., 49; *Sweden*, opt., X-ray, 314

Garberg v. Sweden

Gardette v. France

Garghia mts. v. Romania

Garnet, Al₂O₃ in, 134; coexisting with clinopyroxene, orthopyroxene, 195; crystal chemistry, 266; elastic constants, 249; grossular content in eclogitic rocks, 330; inclusion trails in porphyroblasts, 67; in eclogite, anal., opt., 30; in eclogite, comp., 159; in garnet peridotite, anal., 30; thermal diffusivity, 250; TiO₂ in, comp., opt., X-ray, 215; *Aar*, comp., opt., X-ray, 231; *Africa*, comp., opt., X-ray, 45; *Alto Adige*, in metamorphic rocks, comp., 248; *Bihar*, Sr in, 303; *Bohemian massif*, corroded in peridotite, 62, inclusions in, 62; *Broken Hill*,

arnet, (contd.)

Australia, in quartzite, anal., 21; *Bushveld*, comp., 245; *China*, comp., 249; *Czechoslovakia*, anal., opt., X-ray, 132; *Darjeeling*, in schists, gneisses, 45; *Erzgebirge*, in skarns, 216; *Grenna*, 247; *Idaho*, comp., opt., 52; *Italy*, in eclogitic rocks, 247; *Kurusay*, in skarns, comp., 37; *Kyoto*, comp., 132; *Madras*, with biotite in enderbite, 303; *Moravia*, in granulite, 332, in skarns, comp., X-ray, 216; *North Carolina*, 338; *Norway*, in eclogite, opt., X-ray, 47, in mica schist comp., opt., X-ray, 316, minor elements in, 45; *Saitama*, in amphibolite, anal., opt., X-ray, 133; *Saxony*, in metabasites, stability, 215; *Sudetes*, in quartzite, anal., 49; *Turkey*, 215; *Ukraine*, in eclogite, opt., X-ray, 149, opt., 303; *Valais*, as metamorphic indicator, comp., 132; *Yakutia*, in eclogite, comp., 217

—, yttrium, synthetic, 31

—, quartzite, *Broken Hill, Australia*, comp., 21

Garnierite, *Kyoto*, 91

Gas, natural, C isotopes in, 205; inclusions in minerals, 260; inclusions in skarn veins, 205; in gas pools, 298; in Palaeozoic reef formations, 189; of ore-deposits, 298; removal of sulphur, 189; *Caucasus*, 297; *Ciscaucasia*, in aquifers, 297; *Hungary*, 295; *Khibiny*, in alkaline rocks, 119; *Natal*, in thermal springs, 205; *Siberia*, in alkaline pluton, 298; *Ust'-Urt*, 297; *v. also* volcanic gas

Gascony, gulf of = *Bay of Biscay*

Gaskasjari v. Norway

Gaudefroyite, structure, 95

Gaylussite, *California*, 270, structure, 84

GB, Sb in, 259

Gedrite, stability relations, 194

—, Li-, formula, 47

Geevor mine, *Cornwall v. England*

Gehlenite, IR, 133

Geikielite, in ilmenites from kimberlites, 55

Gels, crystallization, 20

Gem park v. Colorado

Gem-rocks, 31

Gemstones, 31, 186; book, 197; *Van Nostrand's catalog*, 262; *North America*, book, 261

Genesis of dolomite in sediments, book, 9

Geneva-Davis mine v. Michigan

Genthelvite, with cassiterite, anal., opt., X-ray, 138

Gentnerite, in meteorite, anal., 126

Geobarometry, of migmatites, 145; use of $Al_2Si_5O_10$ polymorphs, 157; *Rhodesia*, arsenopyrite, 222

Geobotany, *Siberia*, of ore-deposits, 42

Geochemical prospecting, *Colorado*, anomalies of Pb, Cu, Mo, Zn, 271; *Philippines*, for Cu ores, 298; *Yugoslavia*, for Hg, 119

Geochemistry, 32, 111, 197, 289; direct reading emission spectrometry, 260; element ratios in crystallization of minerals, 110; hydrothermal ores, book, 88; of epigenesis, book, 7; mathematical analysis of data, 290; new instrumental techniques, 87; organic, 32; organic, of Precambrian, 87; researches, book, 87; use of quantitative microautoradiography, 6

Geochronology, 87; *v. also* age-determination

Geodes, *Colorado*, minerals, 78; *Tennessee*, in chert, 78

Geological data, cluster analysis, 79; relationships among sequences, 80

Geological materials, thermoluminescence, book, 261

Geology, atomic absorption spectrometry methods, 88; mathematical, book, 9; related to nutrition, 206

Geomagnetic polarity, 77

Geophysics, prospecting for Sn, 187; study of magma & tectonics, 229; *Uganda* survey, 164; *Yakutia*, prospecting for diamond, 102

Georgetown, Queensland v. Australia

GEORGIA, tektites, 44, 214; *Cartersville, Bartow Co.*, baryte, 78; *Ellerton*, biotite in granitic rocks, 48; *Lincoln Co.*, cordierite-garnet gneiss, 159

GEORGIAN SSR, diopside augites, 320; Pb, Zn, Cu in intrusive rocks, 200; *Dzirul*, K, Rb, Tl in granitoids, 199; *Tbilisi (Tiflis)*, laumontite, 53

Geosyndclines, 316

Geotechnical classification of rocks, 60

Geothermal gradient, *Caucasus*, 336

Geothermometry, fluid inclusions in calcite, 21; Ni in pyrrhotite, pyrite, 106; pyrite-pyrrhotite method, 106; synthesis of Fe-rich sphalerite, 26; thermoluminescence of limestone, 72; tridimensionality of alkali feldspar, 51; two-feldspar method, 50, 283; use of diogenite, 27; use of electro-conductive minerals, 103; *Quebec*, of Ni ore, 99; *Romania*, Re/Mo ratio of molybdenite, 57; *Tessin*, of sulphide ores, 186; *Transbaikal*, Fe in sphalerite, 140

Gerevi hills v. Tanzania

Germanite, thermal stability, 191

Germanium, epitaxial growth with Si, 104; in meteorites, 211, 212, 301, 302; optical orientation, 104; single crystals, 104; *Karamazov*, in greisens, 200

— minerals: new Ge-Cu sulphide, 225

GERMANY, asphalt in bituminous shales, 203; bleached zones in Bunter sandstone, 243; Br in evaporite deposits, 39; clay minerals, feldspars, gypsum, for ceramics, 173; dolomites, 68; Pb-Zn sulphide ores, 291; potassium deposit, 262; S isotopes in ores, 33; S isotopes in waters, 297; Sr in limestones, 38; *Aldingen*, B in Keuper sediments, 294; *Altenberg*, Sn greisen ores, 188; *Bavaria*, clay minerals in loess, 12, Hg in fluorite veins, 33, rapakivi granites, 323, U minerals, 77; *Bayrischer Wald (Bavarian Forest)*, tourmalines from pegmatites, 216, zircon, apatites in granodiorite, gneiss, 68; *Bergell*, granitic rocks, 325; *Berggiesshübel*, *Elbtal mts.*, genesis of skarns, 329; *Bieber, Hessen*, emplectite, 77; *Black Forest (Schwarzwald)*, mineralogical excursion, 337, secondary minerals in quartz porphyry, 330; *Böhl scheiben*, clay shale, 290; *Caminau, Lusatia*, granodioritic kaolin, 175; *Chattenberg mine, Werra river*, baryte, 280; *Doberlug*, tonsteins, 154; *Dreislar, Sauerland*, $CaSO_4$ in baryte veins, 34; *Düppenweiler*, pseudomalachite, libethenite, 77; *Ehrenfriedersdorf*, Sn greisen ores, 188; *Erzgebirge*, skarns, 329, Sr in baryte, 290, U, Th in metamorphic rocks, 40, 296; *Freiberg, Saxony*, Pb-Zn-Ag ores, 229; *Freital-Döhlen*, tonsteins, 154; *Giessen*, benthonic beds, 13; *Gifhorn*, crude oils, 205; *Grader Seife, Hocheifel*, analcite trachytes, 217; *Granulitgebirge*, biotite, garnet, orthopyroxene, 136; *Gustav mine, Werra river*, baryte, 280; *Halle*, volcanic rocks, 233; *Halsbrücke*, Pb ore, 290; *Hasselfelde*, Hg, zircon in slates, 328; *Hoppenstedt*, limestone, 290; *Johannistal, Holstein*, apatite in pyritized wood, 337; *Kaisersstuhl*, carbonatites, 62; *Kirchberg, Vogtland*, granite, 232; *Kleinsassen, Rhön mts.*, tuffs, basalt, 319; *Krunkelbachthal*, U minerals, 77; *Kusel*, trace elements in sediments, 37; *Laachersee*, Pleistocene volcano, 327; *Lahn basin*, weiburgite, 68; *Lebach, Saar*, shale, clay-ironstone, 245; *Leichtenberg*, gersdorffite, 270; *Lindener Mark*, Mn ores, 280; *Marburg-an-der-Lahn*, pallasite, 125; *Marlsburg*, trace elements in granite zones, 114; *Marzell*, ignimbrite, 319; *Meggen*, baryte, 34; *Meissen*, granite, 290; *Mellenbach*, basalt, 290; *Menzenschwand*, granite minerals, 77; *Münster valley*, ignimbrite, 319; *Nabburg-Wölsendorf, Bavaria*, fluorite, 22; *Nahe*, trace elements in sediments, 37, 38; *Oelsnitz*, tonsteins, 154; *Petersberg*, laumontite, 53; *Radautal, Harzburg*, prehnite, 14; *Rhine*, altered diabase, 62, Fe, Mn, Ca, Mg in carbonate minerals, 57; *Ries*, glass bombs, 214; *Ries Kessel*, topographic features, 214; *Rügen*, structure of chalk, 243; *Ruhr basin*, amino acids, carbohydrates in coal beds, 295, asphalt in bituminous shales, 203; *Saar*, trace elements in sediments, 37, 38; *Saar-Nahe-Pfalz*, palatinates, 229; *Sauerland*, Devonian igneous rocks, 68; *Saxony*, garnets, 216, pyrrhotites, magnetites, 140; *Schellingen, Kaiserstuhl*, carbonatites, 62; *Selberg*, analcite trachytes, 217; *Senke*, trace elements in sediments, 37; *Stassfurt*, banded halite, 328, marine evaporites, 39, potash-salt rocks, 23, roof halite, 328; *Teuschnitz, Thuringia*, conglomerate, 243; *Thuringia*, Bunter sandstone, 243, carbonate, sulphate rocks, 243, dolomite, celestite, calcite, 328; *Upper Rhine valley*, minerals in sediments, 328; *Vogelsberg, Hesse*, volcanic flow fabrics, 324; *Waldeck, Hessen*, coiffuite, zeunerite, nováčekite, 77; *Walshut*, sandstone, 328; *Werra, CO₂* in Zechstein deposits, 339; *Ziegenrück, Thuringia*, conglomerate, 243; *Zwickau*, tonsteins, 154

Gersdorffite, *Germany*, X-ray, 270; *Slovakia*, structure, 181

GHANA, rocks, ores, minerals, 289; *Bosumtwi crater*, rare-earths, Ba in country rocks, 214

Ghazni v. Afghanistan

Ghori v. India

Gibbsite, dehydration to form boehmite, 11; *Baux*, in bauxite, 141, 175

Giesen v. Germany

Gifhorn v. Germany

Gigayear, definition, 167

Gigae v. France

Gillespite, synthesis, X-ray, 286

Gismondine, structure, 93

Gissar range (Gissars) v. Tadzhik SSR USSR

Gjerstad v. Norway

Glacial rocks, *Congo*, 154

Glacial spherules, density, 215

Glacial stages, *Spitsbergen*, age, 168

Gladhammar v. Sweden

Gladite, 270; *Sweden*, X-ray, 143

Glas Eilean vent, Argyllshire v. Scotland

Glass, alkali silicate, structure, 266; aluminosilicate, hydration, 30; barium, 8; hay-silica, 302; impact, comp., 302; in ecruite, 214; natural, Sb in, 207; *Ries crater*, bombs, comp., 214; *Victoria & Tasmania*, comp., 214

—, volcanic, diffractograms of powder, 84; leaching, 110; micro-forms, 302; *Carpathians*, comp., 176; *Netherlands*, 327; *Sicily*, d.t.a., t.g.a., 195

— industry, petrography, 8

Glauberite, *California*, structure, 181; *Madrid*, structure, 181

Glaucochroite, optical absorption, 265

Glauconite, as depth indicator, 241; in modern sediments, 264; *Cluj*, X-ray, 187; *Derbyshire*, in limestone, comp., opt., X-ray, 187; *Italy*, in limestone, comp., 37; *Maryland*, weathered, 137

Glaucomphane, transition, 32; *Alps*, in metagreywackes, 157; *Morbihan*, anal., opt., 216; *Spain*, 157; *Turkey*, in schists, 158

Glomeroblasts, of epidote, 73

Glove mine *v. Arizona*

Gneiss, NH_3 content, 40; *Aar*, 231, comp., 247; *Alps*, U, Th in, 18; *Antarctica*, 323; *Argentina*, age, 256; *Bavaria*, zircon, apatite morphology, 68; *Carpathians*, radioactivity, 230; *Cascades*, origin, 65; *Colorado*, sillimanite grade, 75; *Connemara*, K-feldspars in, 50; *Finistère*, age, 82; *Guiana*, with orthopyroxene, 159; *Hérault*, regional lineation, 237; *Izera mts.*, inclusions in leucogranite, 232; *Malawi*, comp., 235; *New Zealand*, age, 256; *Njoka*, with lenses of graphite, 282; *Norway*, Precambrian, 157, ribbon, 331; *Pyrenees*, zircon in, 303, 315; *Quebec*, 151, O isotope equilibrium, 296; *Rhum*, comp., 230; *Romania*, 248; *Shetland*, 73; *Sierra Leone*, comp., 234; *Sudetes*, metasomatic origin, 72; *Switzerland*, triclinicity of alkali feldspar, 51; *Tatra mts.*, age, 83; *Venezuela*, albitic, 75; *Zambia*, forming dome, 63

—, aegirine, *Malawi*, comp., 63

—, augen, *Côte-d'Or*, 331; *Finistère*, 247; *France*, 73; *Norway*, 50, 157, 331; *Pelvoux*, 157

—, biotite-sericite, *Aar*, comp., 185

—, cordierite, *Georgia*, 159; *Norway*, 157

—, granite, *South Australia*, comp., 74

—, hypersthene, *Mauritania*, 45

—, sillimanite, *Mauritania*, 45

Gobie *v. Oregon*

Goe range *v. Liberia*

Goethite, authigenic in deep-sea sediments, 244; Mössbauer effect, 180; *Banat*; X-ray, 245; *Black Forest*, 330; *Maryland*, from weathered glauconite, 137; *New South Wales*, in basalt, 155; *Western Australia*, ore, 279

Golconda mine, *Derbyshire v. England*

Gold, alloy with Ag, reflectivity, 84; determination, 5, 84, 207, 259; in meteorites, 207, 211; in meteorites, tektites, sediments, 43; in sea-water, 118; reflectivity of alloys, 258; stability of colloidal dispersions, 284; *Amur*, trace elements in, 113; *Brazil*, in conglomerate, 277; *New England*, placer, 78; *Slovakia*, 101; *South Africa*, distribution in reefs, 186; *Switzerland*, 337; *Transbaikal*, Au in, 35; *Wallis*, 185

Gold hill *v. Utah*

Gold ores, Ag in, 100; *Aldan*, 184; *Altai*, 183; *Colorado*, 100; *Congo*, 278; *Kolyma*, 184; *Lena*, in sulphide rocks & quartz veins, 277; *Mysore*, 278; *Northern Territory*, *Australasia*, Au-Cu ores, 18; *Philippines*, 274, 278; *Quebec*, Au/Ag ratios, 277; *Salsigne*, 100, 278; *South Africa*, 277; *Stanovoy range*, 149; *Transbaikal*, Au-Sb ores, 278, hypogene, 278; *Waldrose Wielkie*, 18; *Washington*, Au-Ag ores, 151; *Witwatersrand*, apparent fineness values, 277; *Yukon*, 98

Golfe du Lion *v. France*

Gollack burn, *Banffshire v. Scotland*

Gonnardite, *Auvergne*, thermal decomposition, 221; *Niigata*, in altered basalt, comp., 221

Gopannavalasa *v. India*

Gorbiachin river, *Siberia v. Russian SFSR*

Gorceixite, *Bohemia*, in phonolite, 78

Gorno *v. Italy*

Gorny Altai, *Siberia v. Russian SFSR*

Goryachegor, *Siberia v. Russian SFSR*

Goshen valley *v. Alabama*

Gossan, *Tasmania*, fossil, 279

Gosses Bluff, *Northern Territory v. Australia*

Gotthard *v. Switzerland*

Goutte Louis *v. France*

Gowari Wadhwana mine *v. India*

Graciosa *v. Atlantic Ocean*

Grader Seife *v. Germany*

Grain contacts, in metamorphic rocks, 246

Grain-size, distribution in nature, 240; of igneous rocks, 316

—, analysis *v. micrometric analysis*

Grande-Dixence *v. Switzerland*

Grand Isle *v. Vermont*

Grand Lac *v. Cambodia*

Granès *v. France*

Grängesberg *v. Sweden*

Granite, classification, 315; comp., 53; cratonic, 315; decomposition by HF, 4; derived from sedimentary rocks, 326; equation of state, 250; experimental disaggregation, 30; Grenville & Lewisian compared, 315; In in, 260; layering, 173; origin of flow textures, lineation, 190; Pb, Zn, Cu in, 35; production of fissures, 104; Sr, Rb in, 259; temp. of formation, 283; thermal conductivity, 336; under pressure 250; weathering of biotite, 264; *Aar*, comp., 231, 247, U, Th, K, in 293, with orientated xenoliths, 237; *Afghanistan*, 322; *Angara*, alaskite, 321; *Antarctica*, comp., 67; *Anti-Atlas*, age, 1; *Argentina*, age, 256; *Auvergne*, experimental production of sands, 283; *Bavaria*, with rapakivi texture, 323; *California*, fused by andesite, comp., 329; *Cape, South Africa*, K isotopes at contact, 118; *Cornwall*, related to experimental system, 68; *Dalarna*, primorogenic & serorogenic 146; *Dartmoor*, with rapakivi texture, 67; *Dnieper*, ore-minerals near contact, 97; *Ethiopia*, pre-granite accessory minerals, 68; *Europe*, K/Rb in 34; *Finistère*, age 82, structure, 151; *Forez*, interbanded with gneiss, 238; *Galway*, feldspars in, 50; *Gorny Altai*, with accessory ore minerals, 233; *Holm*, *Norway*, comp., gravity, 331; *Italy*, 318; *Japan*, Fe, Mg in, 114; *Kazakhstan*, metasomatism, comp., 39, new type of formation, 152; *Ladoga*, with rapakivi texture, 323; *Mama*, with spherical aggregates, 80; *Manche*, submarine, 318; *Marlsburg*, zoning of trace elements, 114; *Massif Central*, 230, with weathered crust, 328; *Mauritania*, 45; *Mayo*, aureole, 156; *Meissen*, comp., 290; *Morocco*, age, 81; *New Zealand*, Se in, 39; *Nîze*, with aureole, 156; *Norway*, metamorphosed, 157; *Oklahoma*, anal., 65; *Poland*, tectonic evolution, 237; *Portugal*, intrusion of plutons, 324; *Pyrenees*, altered to sericite, 156, ring-intrusion, comp., 152, zircons in, 303; *Quebec*, 151; *Queensland*, 332; *Rhode Island*, permeability under pressure, 250; *Shetland*, with thermal aureoles, 73; *Sidobre*, texture, 169; *Singhbhum*, trace elements near Cu lodes, 112; *South Africa*, K isotopes near contact, 118; *Spain*, age, 83; *Sweden*, comp., 156, gravity survey, 161; *Switzerland*, photogrammetric projection, 324, with Variscan structures, 332; *Tasmania*, age, 1; *Transbaikal*, Au in, 35, metasomatic alteration, accessory minerals, 55

Ulkan, Zr in, 200; *Var*, two facies, 317

Velay, with fine-grained enclaves, 331

Venezuela, age, 255; *Vogtland*, intruding phyllites, 232; *Vosges*, 318, feldspars in 50; *Zambia*, comp., 63

—, aegirine-dalyite, comp., 34

—, albite, *Tien-Shan*, 320

—, biotite-amphibole, *Antarctica*, comp., 63

—, microcline, *Antarctica*, comp., 67

—, muscovite, *Massif Central*, origin, 238

Granitic magma, source, Pb isotopes in, 34

Granitic rocks, Be in, 199; equilibrium in hydrothermal experiments, 288; origin, 262; U in, 35; *Africa*, age, 81; *Ascension island*, with fluid inclusions, 34; *Baltimore*, weathering, 12; *Bergell* & *Adamello*, origin, 325; *British Isles*, age, 168; *Cornwall*, Sn, Cu, Be in, 188; *England*, element distribution, 35; *Georgia*, Fe, Mg in, 48; *Gotthard*, petrofabric studies, 238; *Hungary*, comp., 232; *Indonesia*, with quartz-feldspar intergrowths, 322; *Japan*, age, 82; *Kazakhstan*, Rb, K in contact zone, 7; *Maine*, stocks, 151; *Pyrenees*, major elements in, 39; *Queensland*, comp., 152; *Sierra Nevada*, Ca in, accessory minerals, 34, pleochroic haloes in biotite, 218; *West Pakistan*, comp., 150

Granitic texture, 316

Granitization, *Karelia*, 149; *Morvan*, 318

Granitoid rocks, Rb, Li, Ba, Sr in wall-rock, metamorphism, 199; Ta, Nb in micas, 49; two-feldspar geothermometry, 50; with ore complexes, 96; *Altai*, U in, 36; *Azov*, Ga in, 200; *Bornholm*, density, magnetic susceptibility, 161; *Buryat* *ASSR*, accessory minerals, 7; *Czechoslovakia*, associated with marble, 72; *Dzungaria*, age, 257; *Europe*, K/Rb in, 34; *Georgian SSR*, K, Rb, Ti in, 199; *Kazakhstan*, Rb, Th in, 7; *Sakhalin*, age, 82; *Sardinia*, 231; *Sayan*, Rb, Li in, 199; *Siberia*, comp. of amphiboles, 306; *Sudetes*, comp. origin, 63; *Tadzhikistan*, Sc in, 35; *Taymyr peninsula*, comp., 149; *Tien-Shan*, Be in, 199; *Transbaikal*, rare elements in biotites, 49; *Zarow*, comp., 63

Granites & migmatites, book, 88

Granodiorite, *Aar*, comp., 247; *Antarctica*, age, 166; *Colorado*, age, 168; *Flamanville*, with rapakivi feldspars, 308; *Karamazov*, In, Ti in, 200; *Lusatia*, weathered to kaolin, 175; *Nevada*, hydrothermal alteration, 97; *Pyrenees*, comp., 152; *Quebec*, 151; *Serbia*, pluton, 232; *Tien-Shan*, 320; *Tuscany* & *Elba*, Na, K, Li, Rb in, 34; *Zarow*, 63

Granodioritic rocks, *Bavaria*, zircon, apatite morphology, 68; *Roncogno Valsugana*, 231

Granofels, *Novara*, 332

Granogabbro, *Pyrenees*, comp., 152

Granophyre, *Iceland*, forming net-veins 60; *Massif Central*, 230; *Rhum*, comp., 230; *Tien-Shan*, 320; *Transkei*, 235

Transvaal, 235

Granosyenite, *Kola*, 150

Granulite, *Guyana*, with orthopyroxene comp., 159; *India*, garniferous, comp., 322; *Kola*, comp., 158; *Malawi*, charnockitic, comp., 235; *Massif Central*, enclaves in dyke, 156; *Moravia*, garnets in 332; *Sierra Leone*, mineral resources, 234; *Uganda*, retrogressive metamorphism, 74

Velay, comp., 247

Granulitgebirge *v. Germany*

Granitic intergrowth, *Canada*, in feldspars

aphite, C isotopes in, 39; Compton profile, 249; dislocation loops, 249; edge & screw dislocations, 160; heat of combustion, 190; in meteorite, Kr, Xe in, 301; optical anisotropy, 251; world resources, 22; *India*, origin, 281; *New York*, 338; *Njoka*, lenses in gneiss, 282; *Poland*, from metamorphosed coal, X-ray, 329; *Yonggok*, xenolith in coal-field, 282; K., structure, 96

raphocite, definition, 70

ravitation, pulsating, 164

ravity measurements, *Aberdeenshire*, over gabbros, 161; *Norway*, over granite, 331; *South Australia*, 339; *Sweden*, over granite, gneiss, 161; *Tasmania*, over dolerite, 67

raywacke *v.* greywacke

reat Bank of Newfoundland *v.* Atlantic Ocean

reat Basin *v.* United States

reat Bear lake, North-West Territories *v.* Canada

reat Dyke *v.* Rhodesia

reat Lake, Tasmania *v.* Australia

reece, *Allchar*, vrbaita, 57; *Euboea island*, lava flow, 232; *Laurium*, Pb minerals, 80, sulphides, carbonates, 98; *Rodiani*, chromite, 311

reen beds, *Dobrogea*, 248

reenland, anorthosites, 59; layered granites, syenites, 173; orthopyroxenes, 267; picritic rocks, 61; *Ilmaussaq*, alkali massif, 7; *joaquinite*, 304; *Ivigtut*, berryite, 225; *cryolite* deposit, 146, thomsenite, 269; *Kaerven*, layered basic rocks, 173; *Kap Edward Holm*, layered basic rocks, 173; *Kap Farvel*, mangerite-charnockite suite, 73; *Scoresby Sund*, basalt, 60; *Skaergaard*, layered igneous rocks, 173, magnetites from gabbro, 311, rare-earths in rocks, 228; *Torv Gletscher*, lava, 60

Greenockite, *New Jersey*, in basalt, 78

Green rust, X-ray, 105

Greenschist, silica index, 114; *Switzerland*, 332

Greenside mine, *Cumberland* *v.* England

Greenville *v.* Maine

Greenville *v.* Mississippi

Greigite, thermodynamic stability, 285; *Belgium*, X-ray, 310

Greina mts. *v.* Switzerland

Greisen, with helvite, 53; *Cornwall*, Sn in, 188; *Karamazov*, In, Tl in, 200; *Kazakhstan*, metasomatism, comp., 39; *Ulkan*, Zr in, 200

Grennaite, *Sweden*, age, 324

Grenville granite, 315

Greywacke, Li in, 202; *California*, radioactivity, 251; *Germany*, with baryte, 280; *New Zealand*, Se in, 39; *Washington*, anal., 333, with prehnite, anal., 333; *Wyoming*, geochemistry, 115

Grimaldiite, *Guyana*, 127

Grimstad *v.* Norway

Grindstone, *Germany*, 328

Grit, *Isère*, with ignimbrite, 328

Grochowa *v.* Poland

Grosipydite, *Yakutia*, 305

Grossular, *Lower Silesia*, in alteration zone, 320

— andradite series, synthesis, 286; *Czechoslovakia*, in marble, X-ray, 72

— spessartite series, synthesis, opt., X-ray, 286

Groutite, *New Jersey*, antimonian, comp., opt., X-ray, 56

Grunerite, redox behaviour, 288; synthesis, 288

GSP-1, comp., 32; Cu, Ga, Zn in, 86; Mg in, 5; V in, 85

GUATEMALA, *Manzanal*, jadeite, 46; *Rio El Tambor*, eclogite, 47

GUIANA, FRENCH GUIANA, Ag in Au nodules, 100

—, GUYANA, Cr minerals, 127; merumite, 127; *Kanaku*, orthopyroxene-bearing rocks, 159; *South Savanna*, orthopyroxene-bearing rocks, 159

—, SURINAM, itabirite, 279

Guilleminite, *Puy-de-Dôme*, Pb-bearing, 139

GUINEA, *Banankoro*, magnesian ilmenites, 55; *Bounoudou*, magnesian ilmenites, 55

Gula, *Siberia* *v.* Russian SFSR

Gulf Coast *v.* North America

Gulf of Aden *v.* Arabian Sea

Gulf of Alaska *v.* Alaska

Gulf of Bothnia *v.* Europe

Gulf of California *v.* North America

Gulf of Mexico *v.* United States

Gulf of St. Lawrence *v.* North America

Gun'ma, *Honshu* *v.* Japan

Gustav mine *v.* Germany

Guyana *v.* Guyana

Guyanaite, *Guyana*, 127

Gypsum, dehydration, X-ray, 169; dissociation under pressure, 26; identification, 259; solubility, 26; world resources, 22; *Ariège*, in cave, 339; *Aude*, with inclusions of fossils, 164; *Baja California*, in lagoon, 71; *Israel*, anhydrite inclusions, 224; *Lubin*, in clay rocks, 243; *Paris basin*, bacterial origin, 203, C & O isotopes in, 176; *Spitzbergen*, secondary, 177; *Urals*, in pyrite ore, 291; *v. also selenite*

Haapaluoma *v.* Finland

Habach *v.* Austria

Hackmanite, *Lovozero & Khibiny*, colour, luminescence, 220

Haddam *v.* Connecticut

Haddo House, *Aberdeenshire* *v.* Scotland

Häfjell *v.* Norway

Hafnium, determination, 198

Haidingerite, structure, 16

Háje *v.* Czechoslovakia

Hajigak *v.* Afghanistan

Hakozaki mine, *Honshu* *v.* Japan

Hakuba-mura, *Honshu* *v.* Japan

Halaguru *v.* India

Haliburton highlands, *Ontario* *v.* Canada

Halimba-Szöc *v.* Hungary

Halite (rock salt), gas in fluid inclusions, 290; identification, 259; plastic deformation, 75; *Baja California*, in lagoon, 71; *France*, in Triassic, 280; *Poland*, in tuffite, 63; *Rhône valley*, in Triassic breccia, 188; *Stassfurt*, above potash deposit, 328, classification, 328; *Werra*, CO_2 in, 339

Halle *v.* Germany

Hällefors *v.* Sweden

Halloysite, complex with NH_4Cl , 90; cooling coefficient, 263; dehydration, 90; dehydroxylation, 174; glow curve, 89; identification, by ignition loss, 10; *Baltimore*, formed from weathered monzonite, 12; *Japan*, in volcanic ash soils, 264; *Lusatia*, in kaolin, 175; *New South Wales*, 263

Halogenides, book, 6

Halouze *v.* France

Halsbrücke *v.* Germany

Hambergite, *Baikal*, anal., opt., X-ray, 313

Hamilton basin, *North Island* *v.* New Zealand

Hammarite, 270; *Sweden*, X-ray, 143

Handeni *v.* Tanzania

Hanging Rock, *New South Wales* *v.* Australia

Haradaite, structure, 268

Harghita *v.* Romania

Harmotome, authigenic in deep-sea sediments, 244; structure, 93

Harohalli *v.* India

Harstigite, *Sweden*, X-ray, 221

Harstig mine *v.* Sweden

Haruma lake, *Honshu* *v.* Japan

Hasselfelde *v.* Germany

Hassi-Amrane *v.* Algeria

Hastingsite, *Rhodesia*, comp., 305; *Yakutia*, comp., opt., 305

Hastingsite-pargasite series, 305

Hatchite, structure, 270

Hat creek, *British Columbia* *v.* Canada

Hausmannite, *Arkansas*, 338; *Iwate*, intergrown with galaxite, X-ray, 55; *Japan & Madras*, intergrown with jacobsite, X-ray, 55; *Madhya Pradesh*, X-ray, 20

Hauyne, thermal expansion, 220; *Quebec*, comp., opt., 46

Hawaii *v.* Pacific Ocean

Hay-silica glass, 302

Hazara, *West Pakistan* *v.* Pakistan

Heat capacities, of non-cubic solids, 250

Heavy metals, exchange reactions on clay minerals, 275; sulphide equilibria in solutions, 190; transport in hydrothermal solutions, 32

Heavy minerals, *Africa*, in lake deposits, 328; *Alps*, in Cretaceous, 71; *Angoulême*, in Cenomanian, 242; *Apennines*, from Palaeogene land mass, 328, in flysch, 242, in subgreywackes, 70; *Belgium*, provinces, 327; *Massif Central*, in bauxites, 242; *New South Wales*, in sandstone, 155; *Rhine valley*, with loess minerals, 328; *South Africa*, in gold-bearing reefs, 186, in *Karoo System*, 188; *Switzerland*, in flysch, 154; *Washington*, in sediments interbedded with basalts, 67

Heazlewoodite, *Vermont*, 79

Hectorite, identification by ignition loss, 10

Hedenbergite, Mössbauer effect, 177; synthesis, 286

Hekla *v.* Iceland

Hectolite, *Japan*, in limestone cave, 164

Helium, around ore-deposits, 298; determination, 5; in meteorites, 208

Helvite, in greisen, anal., opt., X-ray, 53

Hematite, fabric data, 250; growth along tilt & twist boundaries, 160; Hg in, 204; magnetism, 162; morphology, 334; *Antarctica*, X-ray, 311; *Banal*, X-ray, 245; *Missouri*, trace elements in, 291; *Norway*, in carbonatite, O isotopes, 291

— ore, *Argentina*, 278; *Australia*, magnetism, 166; *Czechoslovakia*, magnetism, 337; *Mauritania*, 279; *Tasmania*, fossil gossans, comp., 279; *Western Australia*, 279

Hematitization, *Bristol*, 154

Hemimorphite, structure, 267; *Niigata*, anal., X-ray, 134

Hendriksplaats, *Transvaal* *v.* South Africa

Héault *v.* France

Hercynite, cation distribution, 190

Herderite, structure, 267; *Mozambique*, comp., opt., X-ray, d.t.a., crystall., 58; *Virginia*, 79

Herefoss *v.* Norway

Heritier *v.* France

Herod *v.* Illinois

Hessite, rotation properties, 145; *Izu peninsula*, 99; *Philippines*, 278

Heulandite, comp., X-ray, IR, 310; exchanged cations, thermal behaviour, X-ray, 52; *Nova Scotia*, X-ray, 52; *Oregon*, in granitic rocks, 236

Hidalgoite, *Cumberland*, 58

Hidas *v.* Hungary

Highlands v. Scotland
 High-lime silicate liquid, 61
 High-pressure, experimental studies, 24 ; internally-heated apparatus, 24 ; melting law, 190 ; research, 87
Higo, Kyushu v. Japan
Hillebrandite, Honshu, 139
Hillsborough v. North Carolina
Hinsdale, Cumberland, 58
Hiortdahlite, Tuva, anal., opt., X-ray, 304
Hirose mine, Honshu v. Japan
Hisingerite, formed from wollastonite, anal., opt., d.t.a., t.g.a., 47
Hissar v. Tadzhik SSR
Hitachi mine, Honshu v. Japan
Hoare lake v. Antarctica
Hoggar v. Algeria
Holland = Netherlands
Hollandite, Madhya Pradesh, X-ray, 20
Holmesite, 137
Holmite, 137
Holmquistite, formula, 48 ; Kola, anal., opt., 48 ; v. also clinoholmquistite
Holmsite, 137
Holum v. Norway
Honshu v. Japan
Hopeite v. parahopeite
Hoppenstedt v. Germany
*Hornblende, altered to anthophyllite, 306 ; high-pressure deformation, 302 ; metamorphism & molecular composition, 135 ; used in production of castings, 9 ; *Antarctica*, age, 1 ; *Australia*, from diabase, hornfels, comp., 217 ; *Azov*, Ga in, 200 ; *California*, age, 168 ; *Connecticut*, in amphibolite, opt., 75 ; *Connemara*, from amphibolite, anal., opt., 134 ; *Crimea*, pyroclastic, anal., opt., 135 ; *Hokkaido*, comp., 150 ; *India*, pegmatitic, 306 ; *Japan*, comp., 228 ; *Karamazov*, In, Ti in, 200 ; *Kitakami*, in metagabbro, amphibolite, comp., X-ray, 135, in ultramafic intrusives, comp., 135 ; *Malawi*, age, 165, in amphibolite, anal., opt., 235 ; *Quebec*, basaltic, comp., opt., 46 ; *Queensland*, in amphibolite, anal., 64, in tracholite, anal., opt., 64 ; *Seville*, in metamorphosed pelitic rocks, comp., X-ray, 217 ; *Skye*, in basic rocks, comp., 60 ; *Transkei*, in dyke, 235 ; *United States*, age, 256 ; *Urals*, Sc in, 114
Hornblendite, Aar, comp., 247 ; Richtersveld, 235, 236
Hornfels, Fin, 40 ; Hokkaido, with andalusite, cordierite, 45 ; Kozakhstan, rare-earths in, 197 ; Sudetes, metasomatic origin, 72
—, cristobalite, Slovakia, formed from diatomite, 245
Horní Rotava v. Czechoslovakia
Horokanai, Hokkaido v. Japan
Hosokura mine, Honshu v. Japan
Hospitalet v. France
Howieite, Mössbauer effect, 177
Hübnerite, optical absorption, 265 ; structure, 271 ; Transbaikal, comp., 55
Huelgoat v. France
Huenul v. Argentina
Hühnerkobelite, New Hampshire, 78
Humberstone, Chile, anal., opt., X-ray, 131
Humic acids, 203 ; Japan, in lake sediments, 37
Humite minerals, ion substitutions, 266
Hummelm lake v. Sweden
*HUNGARY, age of metamorphic rocks, 256 ; bauxites, 177 ; ceramic raw materials, 176 ; metamorphic rocks, metamorphism, 333 ; nordstrandite, bayerite in brickclays, 176 ; ophiolites, 319 ; origin of hydrocarbons, 295 ; phillipsite, 221 ; spore & pollen types, 80 ; Tertiary volcanism, 325 ; volcanism, 320 ; *Carpathians*, regional**

metamorphism, 332 ; *Csödi* mt., biotite-amphibole andesite, 237 ; *Épérly*, Bakony mts., Mn ore, 279 ; *Fenyőfö*, Transdanubia, bauxite, 295 ; *Halimba-Szöc*, Transdanubia, bauxite, 295 ; *Hidas*, Mecsek mts., lignite, 295 ; *Iszkaszentgyörgy*, bauxite, 295 ; *Kerály* hill, Carpathians, altered tuff, 176 ; *Mád*, bentonite, 176 ; *Matra* mts., Neogene volcanism, 320 ; *Mecsek* mts., U ores, 272 ; *Pilis* mts., 'flint-clay', bauxite, 176 ; *Somoskő*, basalts, 237 ; *Tokaj*, Neogene volcanism, 320 ; *Úrkút*, Mn ore, 80, 279 ; *Velence* hills, granites, 232
Huntite, Persian Gulf, in carbonate-evaporite environment, 142
Huntsville, Ontario v. Canada
Hyaline texture, 316
Hyaloclastite, Sicily, altered to montmorillonite, 195
Hyalophane, Binnenthal, 309 ; Malawi, opt., 235
Hyalopilitic texture, 316
Hyalorhyobasalt, France, 318
Hyalotrichybasalt, France, 318
Hydroboracite, Donets basin, 56
*Hydrocarbons, aliphatic in meteorites, 125 ; anaerobic oxidation, 206 ; aromatic, in meteorites, 213 ; genesis, 205 ; in carbonaceous chondrites, 212 ; in coal, 116 ; in meteorite, 299 ; synthesis in sedimentary rocks, 295 ; *Ciscaucasia*, gases in aquifers, 297 ; *Hungary*, in gasfields, 295 ; *Siberia*, gases in alkaline plutons, 298, in Jurassic sediments, 116 ; *Transvaal*, in Pre-cambrian, 38 ; *Trinidad lake*, in asphalt, 38
Hydrocroussite, Massachusetts, 163
Hydrochlorborite, China, anal., opt., X-ray, d.t.a., t.g.a., 128
Hydrodynamics of oil reservoirs, 189
Hydrogarnet, substitution of SiO_4 by $(\text{OH})_4$, 267 ; synthesis, 8 ; synthesis, X-ray, 109 ; v. also hydrogrossular
*Hydrogen, around ore-deposits, 298 ; in ionic hydrates, 266 ; in mollusc shells, 116 ; osmosis in hydrothermal experiments, 87 ; *Ust'-Urt*, 297*
Hydrogen-oxygen ions, in minerals, 266
*Hydrogrossular, Transvaal, opt., X-ray, fluorescence, 133 ; *Yakutia*, (Transvaal jade), 162*
Hydromagnesite, China, comp., opt., X-ray, d.t.a., t.g.a., 142
*Hydromica, formed from montmorillonite, 10 ; *Ob-Irtysj*, 91 ; *Volhynia*, anal., opt., X-ray, d.t.a., 136*
Hydromphosphides, of heavy metals, 32
Hydrotalcite, Vicenza, opt., X-ray, 58
*Hydrothermal activity, metasomatic mineralization, 72 ; natural systems, 72 ; *Apuseni* mts., mineralization, 98 ; *Bohemian massif*, mineralization, 272*
Hydrothermal alteration, Arizona, of Cu ores, 98 ; Carpathians, 319 ; Genoa, of porphyritic vein, 246 ; Nevada, of granodiorite, 97 ; Romania, of volcanic rocks, 72 ; Urals, of quartzite, 156
Hydrothermal experiments, equilibrium with granitic rocks, 288 ; hydrogen osmosis, 87 ; treatment of obsidian, 229
Hydrothermal fluids, 97
Hydrothermal minerals, effect of tectonic movements, 229
*Hydrothermal ores, book, 88 ; India, wall-rock alteration, 19 ; *Metalliferous* mts., temp. of formation, 275*
*Hydrothermal solutions, formation of Sn ores, 20 ; limits of chemical composition, 24 ; transport of heavy metals, 32 ; transport of ore metals, 198 ; transport of Th, 198**

Hydroxide minerals, book, 6
Hydroxyapatite (hydroxylapatite), exchange of P, Ca, 284 ; formed from chlorapatite, 192 ; solubility, 75
Hydrozincite, Tadzhik depression, supergen X-ray, 312
Hypabyssal rocks v. volcanic rocks
Hyperbasite, petrochemistry, 316
Hypersthene, China, in metamorphic rock, 249 ; Ukraine, in eclogite, opt., 149, with lamellar intergrowths, 46
Hypodiorite, Pilanesberg, 239
Iacobeni v. Romania
Ibaraki, Honshu v. Japan
Ice, crystall., 80 ; nucleation, 190 ; spherical in, 215 ; V-form, structure, 180 ; with spiral air bubbles, 164 ; X-ray, 269
ICELAND, age of intrusive rocks, 255
andesine-labradorite, 51 ; oxidation & polarity in lavas, dykes, 337 ; stilbite, 179 ; titanomagnetites, ferrian ilmenites, 223
*volcanism, 326 ; *Askja*, volcanic ash, 153*
*Austurhorn, net-veined magmatic rocks, 60 ; *Hekla*, volcanic ash, 153 ; *Langvatn*, basaltic volcanoes, 69 ; *Surtsey*, volcanic island, 239, 326 ; *Teigarhorn*, epistilbite, 95 ; *Thangmuli*, magnetite, ilmenite, pyroxene, olivine, chlorophaneite, 311*
Iceland spar v. calcite
Ice river, British Columbia v. Canada
IDAHO, age of basalt & floras, 1 ; Big Creek Ag, Au in sulphide minerals, 277 ; Clean water, scapolite, 52 ; St. Joe, scapolite, 52
Idaite, formula, 310 ; phase relations, 106
Fiji, 274 ; Wallis, 185
Idamakallu v. India
Iddingsite, Transkei, in dyke, 235
Idocrase v. vesuvianite
Idrija v. Yugoslavia
Iglesias, Sardinia v. Italy
Iglesiente, Sardinia v. Italy
Iglika v. Bulgaria
Igneous rocks, distribution of elements, 113
genesis of ground waters, 87 ; IR reflection spectra, 76 ; K, Rb in, 292
petrogenetic theories, 68 ; petrology & magnetism, 60 ; reactions involving gas equilibria, 87 ; Sc, Fe, Yb in, 111
texture, 316 ; trends in element ratios differentiation, 292 ; Chile, 66 ; Ghana, comp., 289
Indonesia, 322 ; Scotland, magnetism of contacts, 337 ; South-West Africa, complex, 235 ; United States, Pb isotopes in, 3
Ignimbrite, type of eruptions, 326 ; Black Forest, 319 ; Canary Islands, 63 ; Chile, 325, age, 2 ; France, 317 ; Hungary, 320
325 ; Isère, 328 ; Norway, 317 ; Tuscan, Na, K, Li, Rb in, 34
Ijolite, Khibiny, mineral associations, comp., 234 ; United States, age, 256
Ikebukuro, Honshu v. Japan
Iki island, Kyushu v. Japan
Ilesite, optical absorption, 265
Ilmaussaq v. Greenland
ILLINOIS, age of alkaline rocks, 256 ; brick-clay products, 175 ; clays, shales, 175
limestones, dolomites, 250 ; mineral production, 182
montmorillonitic clay, 23
oolitic limestone, 240
S, sulphides, 272
Herzberg fluorite, sedimentary & igneous rocks, 244
Peabody mine, Edwards, pyrite clastic fossils, 78
Shelbyville, fluorite, igneous & sedimentary rocks, 244
Illite, change on heating, X-ray, 169
diagenesis & metamorphism, 71
extraction of K from ocean, 90
glow curve, 89
identification by ignition loss, 10 ; i

ite, (contd.)
calcareous dolomites, 12; K isotopes in, 33; release of K, 11; use in ceramics, 176; X-ray diffraction, 84; *Andenne*, 174; *Carpathians*, formed from tuff, X-ray, 176; *Hungary*, effect of heating, 176; *Japan*, IR absorption, 90; *Paris basin*, 264; *Poland*, in Triassic, 92; *Queensland*, in tonstein, opt., 11

-montmorillonite, *Carpathians*, formed from tuff, X-ray, 176
menite, Curie point, 252; ferrian, in basalts, comp., 223; *Antarctica*, comp., X-ray, d.t.a., 311; *Azov*, Ga in, 200; *Egypt*, solid state reduction, 26; *Iceland*, comp., 311; *Rhodopes*, in pegmatite, 144; *Taymyr*, in schist, X-ray, 158
-Mg, *Guinea*, anal., 58
ore, *Egypt & Norway*, reducibility, 189

semannite, *Bohemia*, 101
vaite, identification, 141; structure, 177; *Italy*, in skarn, 216; X-ray, 268

nataca v. Venezuela
thofite, *Lengenbach*, X-ray, 126
nunachuk river v. Alaska
nogolite, electron microscopy, 175
naptite, *Arizona*, metallic spherules in, 44; *Ghana*, glass, Ba & rare-earths in, 214

impact metamorphism, 87

imperial Co. v. *California*
ragla, *Siberia v. Russian SFSR*
inclusions, CO_2 in quartz, 198; composition of fluids, 6; Fe_2O_3 in oligoclase, 51; foraminifera in gypsum, 164; gases in minerals, 260; in blue diopside, 217; in quartz, fluorite, 315; in star diopside, 196; in star pyroxene, 197; in zircon from granitoids, 45; microlites in corundum, 311; minerals in diamond, 334; villiaumite in eudialyte, aegirine, 63

fluid, in albite, 138; in calcite, 21; in fluorite, 144; in granitic rocks, 34; in minerals, determination, 4; in quartz, 220; in quartz, calcite, dolomite, 275

-gas-liquid, in baryte, 143; in Co-Mo ores, 187; in minerals, 290; in nepheline, pyroxene, sodalite, 282

noncongruent melting, of minerals, 103

nderite, *Donets basin*, 56

NDIA, age of metamorphic rocks, 2; age of radioactive mineralization, 2; beryls, 134; chromites, 141; clays, for brick-making 263; coals, 23; Ga in bauxites, 295; Li-bearing pegmatites, 136; tectonics, 80; tracks in mica, 137; wall-rock alteration in hydrothermal ores, 19; *Ambo*, ferrian ilmenites, 223; *Ambo-Dongar*, fluorite, 22, 335; *Andhra Pradesh*, palygorskite clays, 11; V-Ti magnetite ore, 103; *Baragolai mine*, melanite, 78; *Balkhi*, *Bihar*, epidote, 46; *Bhandura*, Precambrian geochronology, 82; *Bhusaria hill*, *Bihar*, green mica, 48; *Bilgi*, pegmatitic hornblende, 306; *Bombay*, Fe-rich basalt, 322; *Channapatna*, *Mysore*, malacolite, 47; *Chikla*, *Maharashtra*, Mn ores, 279; *Chitradurga*, *Mysore*, basaltic dyke, 150; *Darjeeling hills*, garnets, 45; *Dhanras hills*, dhanrasite, 303; *Dongri Buzurg*, Mn ores, 279; *Drug*, Precambrian geochronology, 82; *Dublalera*, *Bihar*, magnetites from gabbro, 311; *Eastern Ghats*, graphite deposits, 281; *Ghori*, *Chhota Udaipur*, pseudoleucites, 236; *Goponnavaidasa*, linear structures in mica, 49; *Gowari Wadhona mine*, Mn oxide minerals, 20; *Halaguru*, *Mysore*, dolerite dykes, 150; *Harohalli*, oligoclase dolerite, 322; *Idamakkal*, riebeckite syenite, 48; *Jahpur*, *Deccan* traps, 150; *Jokelundi*, *Orissa*,

chevkinite, 53; *Jothwad*, piemontite in calc-silicate rocks, 46, stellate wollastonite, 47; *Kankroli*, *Rajasthan*, amphibolites, 333; *Kaite-Malalwadi*, *Mysore*, salite, 305; *Kerala*, pyrite, 57; *Kolar*, Au ores, 278; *Kondapalli*, enstatite, endiopside, diopside, 46, zoned plagioclase, 219; *Kondavidu*, mylonites, granulites, 322; *Madras*, biotite, garnet, orthopyroxene, 136, hausmannite, jacobsite, 55; *Madukarai*, hedenbergite-andradite-anorthite rock, 51; *Mosaboni mines*, *Singhbhum*, trace elements in rocks, 112; *Mysore*, bauxite, 22; *Nagpur*, Precambrian geochronology, 82; *Pallavarum*, enderbitites, 303; *Rajasthan*, fused pumice rocks, 324; *Rakha mines*, *Singhbhum*, trace elements in metamorphic rocks, 112; *Satnur*, *Mysore*, dolerite dykes, 150; *Singhbhum*, *Bihar*, Cu ore, 96; *Sitasoangi*, *Maharashtra*, Mn ores, 279; *Sivasamudram*, mylonites in charnockites, 157; *Vadambal*, *Mysore*, salite, 305; *Wajula*, *Uttar Pradesh*, klementite, 137; *Yellandlapad*, *Andhra Pradesh*, coal, 80; *Zawar*, *Rajasthan*, Pb-Zn ores, 273

Indialite, synthesis, 88

INDIAN OCEAN, basalt, ultrabasic rocks, 321; Fe, Mn, Cu in sediments, 293; sedimentation rate, 241; trace elements in Mn nodules, 117; trace elements in volcanic rocks, 35; *Chain ridge*, *Somali basin*, age of gabbro, 165; *Crozet island*, volcanism, 326; *Kerguelen archipelago*, origin of red beds, 71; *Marion island*, basaltic rocks, 236; *New Amsterdam islands*, volcanism, 326; *Piton des Neiges*, *Reunion*, basalt-mugearite sill, 148; *Prince Edward island*, basaltic rocks, 236; *Reunion*, volcanic rocks, 255; *St.-Paul island*, volcanism, 326; *Wharton basin*, microtekites, 302

Indigirka, *Siberia v. Russian SFSR*

Indite, *Donets basin*, 56

Indium, determination, 4, 86, 259; *Karamazov*, in ore region, 199; *Soviet Central Asia*, in Pb-Zn ores, 33

- compounds: synthesis of InAs, 104

Indochinites, elastic properties, 214

Indonesia v. East Indies

Inesite, optical absorption, 265

Infrared absorption, of biotites, 48; of calcium phosphates, 224; of carbonate minerals, 224; of chlorites, 179; of clay minerals, 90; of meteorites, 44; of minerals, 58

Infrared emission analysis, 87

Infrared pleochroism, 336

Infrared reflectance spectra, of rocks, 76

Infrared spectra, of mineral surfaces on moon, 80

Ingili river, *Siberia v. Russian SFSR*

Insch, *Aberdeenshire v. Scotland*

Insizwa, *Cape Province v. South Africa*

International Mineralogical Association, 1966 meeting, 260

Intraclasts, 327

Introduction to petrology, textbook, 88

Intrusion, *Khupri mt.*, differentiated, H_2O in magma, 114

Iodine, distribution coefficients in earth materials, 112; in deep-sea sediments, 202; in meteorites, 122, 207; in plants, 206; *Dagestan*, in waters of oil deposits, 205

Ionic compounds, prepared with ordered vacancies, 190

Ionic crystals, thermoelectric power, 77

Ionization potential, related to mineral formation, 289

Iowa, *Sioux Co.*, iowaite, 127; *Volga*, *Clayton Co.*, fluorite, 338

Iowaite, *Iowa*, comp., opt., X-ray, 127

Irazá v. Costa Rica

IRELAND, ferrian ilmenites, 223

-, *DONEGAL*, dendritic pyroxene, 47; geology, 337

-, *GALWAY*, feldspars from granite, 50; *Ballyconneely*, axinitic, epidote, tourmaline, 134; *Connemara*, K-feldspar gneisses, 50; geochronology, 261

-, *MAYO*, *Murrisk*, geochronology, 261, granite, metamorphic rocks, 156

Iridium, in deep-sea sediments, 293; in meteorites, 126, 211, 301; in meteorites, tektites, sediments, 43; *Yakutia*, in ultra-basic & alkaline rocks, 112

Iridosmine, X-ray, 186

Iron, accumulation in Precambrian, 201; behaviour during serpentinization, 149; determination, 4, 5, 85, 86, 170, 171, 172, 198, 259; electronic spectra, 93; epitaxial growth of α -Fe, 104; equilibrium in mineral waters, 119; ferrous in pyroxenes, 93; fractionation in solar system, 197; in feldspar lattice, 199; in igneous & sedimentary rocks, 111; in meteorites, 123; in plagioclase, 52; in pyroxenes from trap-rocks, 46; in sea-water, 41; in titanomagnetites, ilmenites, 223; in underground waters, 41; isomorphic with Mn in minerals, 94; optical absorption spectra in silicates, 76; Mössbauer spectra in coal, 117; X-ray determination, 84; *Baltic Sea*, in concretions, 117; *Cambodia*, in river waters, 119; *Indian Ocean*, in sediments, 293; *North Carolina*, in biotites, ore wall-rocks, 290; *St. Austell*, in kaolinite, 10; *Yakutia*, in waters, 40

- compounds: cation distribution in FeAl_2O_4 , 190; ferrous ions in Fe-Ti spinels, 76; growth of ferroelectric triglycine sulphate, 75; magnetism of Fe_3O_4 - Fe_2TiO_4 series, 162; magnetism of oxide-hydrate particles, 77; melting of ferrosilicic-chromium, 8; phase relations of Fe-Ta oxides, 191; resonance in $\alpha\text{-Fe}_2\text{O}_3$, 252; series FeCr_2O_4 - MgCr_2O_4 , 25; single crystals of Fe-Si alloys, 104; slag from smelt of ferromolybdenum, 8; structure of hydrated FeO , 104; synthesis of Fe-Mg spinels, 191; synthesis of $\gamma\text{-Fe}_2\text{O}_3$, 104; synthesis of sulphides from solution, 285; thermodynamic stability of sulphides, 285; transformations of oxides, hydroxides, 105

- formation, *Broken Hill*, *Australia*, origin, 21; *Kursk*, trace elements in, 294; *Michigan*, O isotopes in, 296; *Quebec*, O isotopes in, 296; *Western Australia*, jaspilite, 279

- group elements, *Spitsbergen*, in amphibolites, 73

- minerals: crystallization of amorphous ferric hydroxide, 10; Fe-Ti oxides in rocks with apatite, 284; Fe, Ti oxides in volcanic rocks, 223; Mössbauer spectra of silicates, 266; new polyarsenite of Fe, Ca, anal., opt., X-ray, d.t.a., 130; stability, substitution in sulphides, 94; *Antwerp*, magnetic sulphide in mud, 310; *Hainault*, secondary phosphates, 224; *Transbaikal* & *Central Asia*, rare elements in hydroxides, 184; *Yorkshire*, diagenetic in sediments, 155

Iron mountain v. Missouri

Iron ores: deposition from solution, 204; pentlandite exsolution from Fe-Ni ores, 285; types & genesis, 278; *Aar*, Fe-Cu sulphides, 231; *Afghanistan*, replacement

Iron ores, (contd.)

origin, 19; *Algeria*, Fe-Cu ores, 18; *Argentina*, sedimentary, 278; *Brittany*, with Sr-apatite, 313; *Cluj*, sedimentary, comp., 187; *Cornwall*, wall-rock alteration of lode, 184; *Egypt*, 101; *Elbtal*, in skarn rocks, 329; *Ghana*, comp., 289; *Kursk*, minor elements in, 199; *Lueta-Vlahita*, post-volcanic origin, 17; *Mauritania*, 279; *Normandy*, stratified oolitic, 19, with oolites, 102; *Ontario*, pyrometasomatic, 99, with syngenetic pyrite, 279; *Poiana Ruscă*, 183; *Québec*, 151; *Rusia & Iacobeni*, 102; *South Africa*, banded & oolitic, 278; *Sweden*, sulphide-bearing skarn, comp., 101; *Tunisia & France*, oolitic, 278; *Turkey*, 272, bauxitic, 281; *Urals*, metamorphic origin of Fe-Ti ores, 74; *Valais*, oolitic, 242; *Western Australia*, stratified, 279

Iron-sand, *Norway*, Precambrian, 157

Ironstone, *Wittenoom gorge*, with stilpnomelane, 49

Ischietto v. Italy

Isérables v. Switzerland

Ishikawa, Honshu v. Japan

Island = Iceland

Isomorphism, 204; effect of pressure on replacements, 24; symposium, 32

Isotopes, in ultramafic rocks, meteorites, 228

ISRAEL K in clays, 262; *Dead Sea*, chloride lake, 118, sulphur cycle, 297; *Galilee*, clay minerals, 175, light minerals in soils, 264; *Makhtesh Ramon*, altered volcanic rocks, 156, anhydrite in quartz, 224; *Mount Carmel*, altered tuffs, 12; *Nahal Ayalon*, mineral veins in carbonaceous rocks, 245; *Negev*, chert, porcellanite, phosphorite, 244; *Tiberias lake*, age of chalk, 257, saline springs, 297, S cycle in waters, rocks, 297

Issyk-Kul' lake v. Kirgizian SSR

Izsákaszentgyörgy v. Hungary

Itabirite, Surinam, 279

ITALY, chondrites, 210; phillipsite, 221; Sr isotopes in lavas, 292; volcanism, ignimbrites, 326; *Adamello*, granitic rocks, 325; *Alberto Bassi*, *Vicenza*, ferrierite, 139; *Alto Adige*, differentiation of gneiss, 248; *Ambin*, *Cottian Alps*, glaucophane rocks, 157; *Apennines*, heavy minerals in sandstone flysch, 242, origin of sandstone, 328, volcanic rocks, 325; *Arno river*, vermiculitic clays, 11; *Assisi*, *Perugia*, meteorite, 43; *Baganza valley*, heavy minerals in sediments, 70; *Bavino*, *Camoscio mt.*, beryl, 304; *Calabria*, ferrocarrpholite, 221; *Campania*, crateric forms, 240; *Campiglia Marittima*, ilvaite, 268; *Capo Calamita*, *Elba*, planchéite, 54; *Carrara*, jordanite in marbles, 18; *Castiglioncello*, volkonskoite, 11; *Cetine di Cotoriano*, *Siena*, Sb oxychloride, 106; *Cogne*, *Aosta*, magnetite ore, 185; *Cottian Alps*, geology, 173; *Decollatura basin*, granites, 318; *Dolomites*, cryptoperthites, 50, sandstone-albite intergrowths, 232; *Elba*, alkalis in granodiorite, 34; *Erselli*, *Genoa*, porphyritic diabase, 246; *Ferrato*, *Prato*, ophiolitic rocks, 61; *Filoncina*, *Perugia*, clay minerals, 12; *Gorno*, Pb-Zn ore, 273; *Ischietto*, *Argentera*, anatexites, 248; *Ivrea*, *Novara*, metamorphic rocks, 332; *Latium*, glauconite, coprolite, 37; *Le Cave*, *Alto Adige*, olivine, 215; *Loro*, gabbro-hornblende, 232; *Maritime Alps*, sandstone, 328; *Merano*, *Alto Adige*, paragneiss, 248; *Modenese* *Apennines*, sandstone flysch, 242; *Monteferro*, strato-volcano, 62; *Ofanto river*, sandstone minerals, 70; *Ossola valley*, regional metamorphism, 248; *Parma*

Apennines, ophiolitic complex, 62, Tertiary sandstones, 70; *Piemonte*, garnets in eclogite, 247; *Planargia*, basalt, 62; *Prinzeria*, *Parma Apennines*, serpentinites, 61; *Recchio river*, sediments, 70; *Roncegno Valsugana*, granodiorite, 231; *Salafossa*, Pb-Zn ore, 273; *San Venanzo*, *Umbria*, tuffite, 61, 232; *Sondalo*, *Lombardy*, olivine gabbro, 239; *Sporno mt.*, sandstones, 70; *Taro valley*, heavy minerals in sediments, 70; *Tonezza*, basic & ultrabasic dykes, 232, hydrocalcite, 58; *Tuscany*, alkalis in volcanic rocks, 34, ilvaite in skarns, 217; *Tyrrhenian Sea*, sediments, 70; *Venetia*, johannsenite, 14; *Vesuvius*, thermal & mineral waters, 41; *Vicenza*, altered basalt pyroclastites, 231; *Viola valley*, *Sondrio*, metamorphic complexes, 248; *Viozene*, spilites, 231; *Vulture mt.*, sandstones, 70

— *CORSICA*, *Sisco*, minette sill, minerals, 48; priderite, 223

— *ELBA*, ilvaite in skarns, 217; *Calamita*, ilvaite, 268; *Capanne*, biotite, 218; *Miniera del Ginevra*, phlogopite, pennine, 49

— *SARDINIA*, ilvaite in skarns, 217; *Arenas*, Pb-Zn ores, 97; *Busachi*, granitic complex, 231, tourmalinite, 198; *Gallura*, lavas, 61; *Iglesias*, Pb-Zn ores, 98; *Iglesias*, igneous rocks, 61; *Montevecchio*, colour of baryte, 76; *Ozieri*, *Sassari*, metamorphic rocks, 73; *Rughe*, *Pozzomaggiore*, volcanic rocks, 61; *San Leone*, ilvaite, 268

— *SICILY*, fossil Mn nodules, 242, 294; kerogen, 295; S deposits, 262; *Aeolian islands*, volcanic rocks, 325, volcanism, 326; *Etna*, lavas, 318, magnetism of lavas, 326, trachybasalt lavas, 61; *Val di Noto*, hyaloclastite, 195

Itatiaria v. Brazil

Itaya, Honshu v. Japan

Itinome-Gata, Honshu v. Japan

Iceland v. Norway

Ivigtut v. Greenland

Ivory Coast, tektites, 214; *Toumodi*, schists, quartzites, basalts, 63

Ivrea v. Italy

Iwasaki, Honshu v. Japan

Izu islands Honshu v. Japan

*Jáchymov v. Czechoslovakia**Jackfish, Ontario v. Canada*

Jacobsite, comp., opt., 311; *Buryat ASSR*, comp., 311; *Balchik* & *Madras*, intergrown with hausmannite, X-ray, 55; *Madhya Pradesh*, X-ray, 20

Jacupirangite, *Minas Gerais*, 236

Jade, *China*, book, 261

Jadeite, equation of state, 250; formed from albite, 288; sources, 261; thermal diffusivity, 250; *Alps*, in metagreywacke, 157; *Guatemala*, comp., opt., X-ray, 46

— rocks, *Urals & Balkhash*, 158

Jahpur v. India

Jalapaite, *Bohutín*, 222

Jamaica v. West Indies

Jamesonite, *Slovakia*, 101

Janowice Wielkie v. Poland

JAPAN, analcime, 138; calcareous deposits in hot springs, 119; clay minerals, 90; Cretaceous volcanic arcs, 64; fireclay, 89; hausmannite, jacobsite, 55; helictites, 164; imogolite, 175; lanthanides in basalts, 325; lavas, 153; linnaeite, cobaltite, 163; Pb isotopes in volcanic rocks, 255; pyroclastic flow & fall deposits from volcanoes, 153; roséki ores, 92; sericite in roséki ores, 306; S isotopes in

sulphide ores, 33; sphalerite, 140, 336; sulphide & oxide minerals from metamorphic rocks, 141; vermiculitic clay, 90; volcanic ash soils, 264, 327; volcanism & orthopyroxenes, 267; volcanism & pyrite deposits, 17; volcanism as source of sulphides, 182; *Miyake island*, anorthite 179; *Okinawa Jima*, spherical speleothem 339

— *HOKKAIDO*, *Akan mine*, *Ashoro-machi*, a cristobalite, 163; *Eramikami mine*, dolomite, 142; *Era mine*, antigorite, 163; *Horokanai*, *Kamuikitani*, gabbro-amphibolite, 150; *Matsumae*, andalusite, cordierite, 45; *Ogishi*, plagioclase propylites, 138; *Tsuchiya-Ishizaki mine*, pyrite, 103

— *HONSHU*, age of granitic rocks, 82; igneous zones, 321; skarns around ores, 139; *Aichi*, age of granitic rocks, 82; *Akata mine*, *Niigata*, kaolinite, 91; *Ani mine*, *Akita*, amethyst, 138; *Ashio mine*, *Tochigi*, Se in pyrite, chalcocite, sphalerite, 113; *Chichibu mine*, *Saitama*, pyrite, 103; *Furutobe mine*, *Akita*, chlorite, 307; *Gan'ma*, altered tuffs, 137, zeolites, 139; *Hakozaki mine*, *Iwate*, knebelite, 132; *Hakuba-mura*, *Nagano*, prehnite, nephrite, 308; *Haruma lake*, humic acid in lake sediments, 37; *Hirose mine*, *Tottori*, dravite, 304; *Hitachi mine*, sphalerite, 98; *Hosokura mine*, *Miyagi*, amethyst, 138, galena, 160; *Ibaraki*, amphibole, 94; *Ikebukuro*, *Nagano*, oxyhornblende, 94; *Ishikawa*, *Fukushima*, microclines, 336; yttriotitanite, 132; *Itinome-Gata*, mafic & ultramafic nodules, 228; *Itaya*, potassium-clinoptilolite, 130, sudoite, 307; *Iwasaki*, *Amori*, todorokite ores, 56; *Izu islands*, Sr isotopes in volcanic rocks, 292; *Kamagane*, metamorphic rocks, 159; *Kanechika mine*, *Kyoto*, garnet, 132; *Kasukabe*, *Saitama*, analcite, 139; *Katakarai river*, muscovite, 136; *Kii peninsula*, granitic porphyry, feldspar phenocrysts, 151; *Kinki*, Mg, Fe in biotite, 114; *Kiso*, stilpnomelane, biotite, 137; *Kitakami mts.*, hornblendes, 135; *Komori*, *Kyoto*, apophyllite, 308, pyralspite garnet, 132, white mica, 136; *Komori mine*, *Kyoto*, attapulgite, mixed-layer mineral, 91; *Kosaka mine*, *Akita*, amethyst, 138; *Kuroishi*, *Amori*, Mn-limonite, 55; *Kuzu*, *Tochigi*, sepiolite, 308; *Maruyama mine*, *Amori*, pyrolusite, todorokite, 56; *Mazé*, *Niigata*, erionite, phillipsite, gonnardite, 222; *Mihara mine*, *Okayama*, scawtite, billerite, brandidite, plazolite, cuspidine, bultfonteinite, 139; *Mitaki*, *Sendai*, anorthite, 138; *Miyazaki mine*, lithiophorite, 58; *Naegi*, *Gifu*, smoky quartz, 138; *Nagano*, age of granitic rocks, 82; *Nakanomata mine*, *Yamagata*, pyrite, 103; *Nanetsu mine*, *Niigata*, hemimorphite, 134; *Nichinan-chō*, *Tottori*, porphyroblastic albite schist, 159; *Nissyo mine*, *Yamagata*, amethyst, 138; *Noda-Tamagawa mine*, *Iwate*, Mn ore minerals, hausmannite, galaxite, 55; *Nometsu*, *Ishikawa*, roséki ores, 92; *Oeyama mine*, *Kyoto*, fibrous minerals, 91; *Oguchi*, vivianite, 163; *Ohori mine*, *Yamagata*, pyrite, 103; *Okayama mine*, *Tottori*, minerals, 99; *Onigajō*, *Miē*, sodian stibite, 139; *Oro*, *Kyoto*, zircon, 132; *Otarizawa mine*, amethyst, 138; *Ryūjima mine*, *Nagano*, magnesian kutnahorite, 312; *Shimané*, zeolite minerals, 338; *Shimané peninsula*, biogenic pyrite, 294; *Shimono*, *Takahagi*, fergusonite, allanite, columbite, 142; *Shin-Furokura mine*, *Akita*, amethyst, 138; *Shinyama mine*, amethyst

PAN, (contd.)
 138; *Suishoyama, Fukushima*, thalenite, 138; *Taiji, Wakayama*, sanidine, 137; *Takahi mine, Yamagata*, galena, 160; *Takozu, Kitakami mts.*, hornblendes, 135; *Tari, Tottori*, chromites, 141; *Toi mine, Shizuoka*, truscottite, 310; *Tomii mine, Tochigi*, amethyst, 138; *Tomiko mine, Ishikawa*, fireclay, 91; *Towada*, pumice & lithia fragments, 153; *Tuge, Mie*, fayalite, 131; *Utsugiyama, Yamaguchi*, ferroedenite, ferrorichterite, 135; *Yanahara mine, Okayama*, pyrite ores, 97; *Yatani mine, Yamagata*, amethyst, 138; *Yoshimi hill, Saitama*, garnet amphibolite, 133; *Yudaira, Ibaragi*, columbite, 142
 — *KYUSHU*, age of granitic rocks, 82; clay minerals, 91; *Higo*, plagioclase in schists, 138; *Iki island*, ultrabasic & basic inclusions in basalts, 322; *Mifune, Kagoshima*, rhyolite obsidian, 110; *Shin-Kiura mine, Oita*, margarite, 137; *Takochiho, ash-flow tuff*, 69
 — *SHIKOKU (SIKOKU)*, Bessi, chlorite from schists, 137, pyralspite garnets, 132; *Kochi*, awaruite in serpentine, 163; *Shodo islet, Kagawa*, ferropargasite, ferroedenite, 135; *Tairawa mine, Kochi*, pyrrhotite, 140; *Yōmoyama mine, Ehime*, braunite-gano-phyllite ores, 49
 — *aspinile, Western Australia*, 279
ebel Khariz v. Arabia
efferson City v. Tennessee
effrey mine, Quebec v. Canada
ihlava v. Czechoslovakia
imboite, structure, 96
voachimsthal = Jáchymov
jaquinite, California, rare-earths in, 304; *Greenland*, anal., 304
foesmithite, Sweden, structure, 179
Johannistal v. Germany
Johannsenite, Italy, structure, 14
løknelundi v. India
Jordanite, Carrara, in marble, X-ray, 16
Joséite, China, 163
Jothwad v. India
Jouravskite, structure, 270
Joyce lake v. Antarctica
Jugoslavia = Yugoslavia
Jupiter, energy emission, 254
Jura v. France

Kaapvaal, Cape Province v. South Africa
Kaczawskie mts. v. Poland
Kadalak v. Afghanistan
Kaersutite, Azov, in lamprophyre, 306; *Cornwall*, anal., opt., X-ray, 218; *Korea*, X-ray, 94
Kaerwen v. Greenland
Kafan v. Armenian SSR
Kaiserstuhl v. Germany
Kalengwa v. Zambia
Kalgoorie, Western Australia v. Australia
Kali Gandaki valley v. Nepal
Kalsilite, Bushveld, 245; *Quebec*, in sedimentary xenolith, 138
Kalvbäcken v. Sweden
Kamagane, Honshu v. Japan
Kamativi v. Rhodesia
Kambove v. Congo
Kamchatka, Soviet Far East v. Russian SFSR
Kamiensk v. Poland
Kamitugo v. Congo
Kaneuchi mine, Honshu v. Japan
Kangankunde v. Malawi
Kangaroo West mine, New South Wales v. Australia
Kankar, definition, 154

Kankroli v. India
KANSAS, age of mica peridotites, 256; dikeite in limestone, 11; limestone near ores, 21; salt deposit, 262; sedimentary rocks, 69; *Riley Co.*, carbonates in kimberlites, limestones, 290
Kanuku, Guyana v. Guiana
Kaolin, comp., 176; preferred orientation, 174; *Hungary*, effect of heating, 176; *Lusatia*, in granodiorite, 175; *Paris basin*, 261
 — group, complexes with NH_4Cl , X-ray, 90; differentiation from chlorites, 174; identification, 89; *Japan*, IR absorption, 90
Kaolinite, adsorbed water, 180; biochemical genesis, 263; cooling coefficient, 263; defect structure, 266; dehydroxylation, 90; dehydroxylation, 174; d.t.a., 10, 90; formed from montmorillonite, IR, X-ray, 90; glow curve, 89; identification by ignition loss, 10; phosphate adsorption, 263; surface activity, 89; surface conductivity, 263; synthesized from zeolites, 289; use in ceramics, 176; *Cameroon & Gabon*, in laterites, 92; *Dordogne*, experimental alteration, 263; *Florida*, effect of heating, 179; *Hungary*, electron microscopy, 176; *Ishikawa*, in fireclay, 91; *Lusatia*, worm-like, 175; *Mozambique*, X-ray, d.t.a., 176; *Niigata*, X-ray, d.t.a., 91; *North Carolina*, resources, 281; *Ob-Iritiysh*, 91; *Poland*, Triassic, 92; *Pyrenees*, 92; *St. Austell*, Fe substitution, 10
 — antigorite group, nomenclature, 48
 — clay, *Khibiny*, weathered, comp., 92
Kapalagud v. Tzanzania
Kap Edvard Holm v. Greenland
Kap Farvel v. Greenland
Kara-Kum v. Turkmenian SSR
Karamazur v. Tadzhik SSR; *Uzbek SSR*
Karamoja v. Uganda
Karaoba (Kara-Oba) v. Kazakh SSR
Karatavu v. Kazakh SSR
Karategins v. Tadzhik SSR
Karelia v. Russian SFSR
Karkaralinsk v. Kazakh SSR
Karkonosze v. Poland
Karpacz v. Poland
Kascoite, X-ray, 138
Kasolite, synthesis, 191
Kasukabe, Honshu v. Japan
Katakai river, Honshu v. Japan
Katanga v. Congo
Katte-Malalwadi v. India
Katwe-Kikoronge v. Uganda
KAZAKH SSR, astrophyllite, 139; formation temp. of quartz, 138; Ge in greisens, 200; granitoids, 152; rare-earths in sodic hornfels, 197; Rb, Cs in altered granite, 7; Se in quartz-fluorite pegmatites, 53; *Balkhash*, granites, greisens, 39, jadeite-bearing rocks, 158, secondary quartzites, 336; *Bet-Pak-Dala*, quartz, fluorite, in pegmatite, 315, Rb, Tl in granitoids, 7; *Chet* composite dykes, 152; *Dzhezkazgan*, Re in sulphide ores, 187; *Dzhumart*, silicomanganberzeliiite, 30; *Karaoba (Kara-Oba)*, bonchovite, 222, cosalite, 251, intra-ore dykes, 149; *Karatavu*, Ge, Cd in sphalerites, 310; *Karkaralinsk*, apatite in volcanic rocks, 7; *Prebalakhsh*, Rb, Tl in granitoids, 7; *Topar, Dzungaria-Balkhash*, age of granitoids, 257; *Ushkatyn*, pennantite, 307
Karsarge v. Michigan
Kem' v. Russian SFSR
Kempirsay v. Russian SFSR
Keno hill, Yukon v. Canada
Kentrolite, phase relations, 108; synthesis, X-ray, 108
 — — melanotektite series, 108
KENTUCKY, age of kimberlite, 256; coal, sedimentary rocks, 244; S, sulphides, 272
KENYA, froth flows in volcanic rocks, 59; red clays, clay minerals, 13; *Magadi lake*, magadiite, kenyaita, 129
Kenyaite, Kenya, anal., X-ray, 129
Kenye, Antarctica, 323
Kerala v. India
Kerály hill v. Hungary
Keratophyre, Bosnia, altered, 158, 232; *Carpathians*, 319; *Graubünden*, 231; *Redon*, comp., 317
 — quartz, *Sardinia*, comp., 61
Kerch peninsula v. Russian SFSR
Kerguelen archipelago v. Indian Ocean
Kerogen, formation, 87; *Sicily*, in black shales, 295
Kerticitoit, Ukraine, in Hg ore, 291
Kettnerite, Bohemia, 101
Keuper, Germany, B in, 294
Keuper marl, Britain, mineralogy, origin, 13; England, classification tests, 13
Khangilay-Shilinskyi, Siberia v. Russian SFSR
Khankay, Soviet Far East v. Russian SFSR
Khara-Ulakh, Siberia v. Russian SFSR
Kharayelakh mts., Siberia v. Russian SFSR
Khartoum v. Sudan
Khataha bay, Siberia v. Russian SFSR
Khan Ploj Waeng v. Thailand
Khibinite, Khibiny, gases in, 119
Khibiny (Khibina) v. Russian SFSR
Khlebodarouka v. Ukrainian SSR
Khondalite, Bihar, with green mica, 48
Khor Temiki v. Sudan
Khrustalnoye, Soviet Far East v. Russian SFSR
Khuperi mt., Siberia v. Russian SFSR
Kieserite, efflorescence, comp., X-ray, 313
Kiglapait, Newfoundland v. Canada
Kii peninsula, Honshu v. Japan
Kikuchi pattern, for crystal orientation, 83
Kilauea, Hawaii v. Pacific Ocean
Kimberley, Western Australia v. Australia
Kimberlite, cognate xenoliths, 228; comparison of localities, 228; diamonds in, 22; geochemistry, origin, 228; geology, 228; rare elements in, 201; reaction with aqueous solutions, 112; relation to basalt, 59; relation to carbonatite, 59; Sr isotopes in, 36; U, Th in zircons, 132; *Africa*, comp. of garnet, 45; *Aldan*, breccia, 234; *Ainō*, Sr, Ba in, 115; *Arizona*, pipes, 228; *Kansas*, Sr in carbonates, 290; *North America*, 228; *Sierra Leone*, with xenoliths, 148; *Sweden*, 147, 246; *United States*, age, 256; *USSR*, 228; *Yakutia*, eclogite in, 216, with ultrabasic xenoliths, 145
 — phlogopite, K-feldspar in, 30
 — carbonatite, symposium, 7
 — pipes, state of preservation of diamonds, 54; *Yakutia*, pyroxenes in xenoliths, 305
Kimberlite rocks, geikieite in ilmenite, 55
Kimberly v. Nevada
Kimzeyite, synthesis, 29
Kinetics of crystallization from fluid phase, book, 88
Kings mountain v. North Carolina
Kinki, Honshu v. Japan
Kirchberg v. Germany
KIRGHIZIAN SSR, Alai range, albite granite, granophyre, granodiorite, 320, Hg, Sb minerals, 272; *Fergana range*, Hg ores, 272; *Issyk-Kul' lake*, shore-zone water, 204; *Kirzic range*, Be in granitoids, 199; *Kyzyladyr, Kirgiz range*, alaskite granite, 321; *Tien-Shan*, Hg ores, 272
Kirkcudbrightshire v. Scotland

Kirk range v. Malawi
Kirton, Nottinghamshire v. England
Kirumba v. Congo
Kiso, Honshu v. Japan
Kitakami mts., Honshu v. Japan
Kiya-Shaltyr, Siberia v. Russian SFSR
Klapa Kampit hill, Indonesia v. East Indies
Kleinsassen v. Germany
Klementite, India, anal., opt., X-ray, 137
Klerksdorp, Transvaal v. South Africa
Knebelite, Iwate, anal., opt., X-ray, d.t.a., 132
Kobokobo v. Congo
Kochi, Shikoku v. Japan
Kodurite, 279
Koidu v. Sierra Leone
Koïtash v. Uzbek SSR
Kola peninsula v. Russian SFSR
Kolar v. India
Kolyma, Siberia v. Russian SFSR
Kolyma, Siberia v. Russian SFSR
Komňa v. Czechoslovakia
Kômori, Honshu v. Japan
Komori mine, Honshu v. Japan
Kondapalli v. India
Kondavidu v. India
Kootenay, British Columbia v. Canada
Kopanice v. Poland
Kopaonik v. Yugoslavia
Kopet Dagh range v. Turkmenian SSR
Kopparberg Co. v. Sweden
KOREA, sodalite, 95; Dagelet island, kaersutite, 94; Sangdong, scheelite in quartz veins, 20, scheelite ore, 276; Tal-ridong, Hakksueng, yttriotitanite, 132; Yonggok mine, Mungyong, graphite, 281; Youngyang, native Cu in basalt, 338
Kostroma v. Russian SFSR
Koryak, Soviet Far East v. Russian SFSR
Kosaka mine, Honshu v. Japan
Kotoite, in glass furnace, 191; structure, 96
Kovdor v. Russian SFSR
Kovodor v. Russian SFSR
Kragere v. Norway
Krasnó v. Czechoslovakia
Kraubath v. Austria
Krennerite, X-ray, 104
Krivoy Rog v. Ukrainian SSR
Krunkelbachtal v. Germany
Krupka v. Czechoslovakia
Krušné hory v. Czechoslovakia
Krypton, in meteorites, 208; isotopes in achondrites, 208; Karelia, in uraninite, 3
Kuba v. Azerbaijan SSR
Kubalach v. Russian SFSR
Kugda, Siberia v. Russian SFSR
Kugi-Lyal mine v. USSR
Kuhmoinen v. Finland
Kuli-Kolon v. Tadzhik SSR
Kunashir island, Soviet Far East v. Russian SFSR
Kunkur, definition, 154
Kunzite, California, anal., opt., X-ray, 194
Kureyka (Kureika), Siberia v. Russian SFSR
Kuriles, Soviet Far East v. Russian SFSR
Kuroishi, Honshu v. Japan
Kursk v. Russian SFSR
Kurskite, IR spectrum, 224
Kurul'tyken'skoye, Siberia v. Russian SFSR
Kurusay v. Tadzhik SSR
Kusel v. Germany
Kutnahorite, Japan, magnesian, anal., 312
Kutum v. Sudan
Kuzbas, Siberia v. Russian SFSR
Kuznetsk Ala-Tau, Siberia v. Russian SFSR
Kuzu, Honshu v. Japan
Kwemahambalawe v. Tanganyika
Kyanite (disthene), electrokinetic potential, 189; electron paramagnetic resonance, 94;
heat of formation, 29; stability field, 194; Greina, 247; Virginia, 23
— shale, Kola, 103
Kynance, Cornwall v. England
Kyushu v. Japan
Kyzyladyr v. Kirgizian SSR

Laachersee v. Germany
Labradorite, cell dimensions, 14; satellite reflections, 15; schiller & lamellae, 51
Laccolith, Hungary, 237
Lacustrine deposits, Sahara, 328
La Esperanza v. Argentina
La Florida v. Spain
Lagao Comprida v. Portugal
La Guadalupe Arcos mine v. Mexico
Lahn basin v. Germany
Lake, Arctic, trace elements in, 297
Lake District, v. England
Lammi v. Finland
Lamproid rocks, Bohemian massif, F in, comp., 293
Lamproite, Utah, comp., 330; Western Australia, age, 1
Lamprophyllite, Kola, orthorhombic, 129; v. also barytolamprophyllite
Land's End, Cornwall v. England
Langarvatn v. Iceland
Långban v. Sweden
Langholm, Dumfriesshire v. Scotland
Languidou v. France
Lanthanides, absorption in visible region, 289; abundance variation, 32; activation analysis, 198; in Earth's crust & chondrites 42; Japan, in basalt, 325
La Paz v. Uruguay
Lara v. Venezuela
Larsenite, synthesis, X-ray, 108, 286; New Jersey, structure, 267
Las Cabesses v. France
Las Chispas mine v. Mexico
Laser microprobe, 260
Laterite, Cr in, 295; Australia, comp., 155
Lateritization, Western Australia, 23
Latite, Cantal, 318; Halle, 233; Serbia, 319; quartz, Colorado, 69; Turkmenia, 149
Latinum v. Italy
La Trappe, Quebec v. Canada
Latrapite, Quebec, comp., X-ray, 127
Laumontite, comp., X-ray, d.t.a., t.g.a., 53; Nova Scotia, X-ray, 52
Laurel Fork v. Virginia
Laurium v. Greece
Lauterbrunnen v. Switzerland
Lautite, structure, 177; Wallis, 185
Lava, red & green colour, 245; Aubrac, magnetism, 162; Cape Verde islands, 61; Etna, comp., 61, magnetism, 326, trachybasaltic, 318; Faroes, basaltic, Ti, Al content, 316; Greece, flows, 232; Iceland, magnetism, 337; Italy, potassio, Rb, Sr in, 292; Makaoipuli, forming lake, 327; Mayomechakoty, alkalies in, 233; Mont-Dore, Cr, Ni, Co in, 293, origin from two magmas, 68; Montiferro & Planargia, 62; Mozambique, age, 165; New Guinea, types, comp., 64; New South Wales, alkaline, 64, basaltic, with segregation vesicles, 324; Rhodesia, basic, comp., 152; Sahara, spilitic, comp., 148; Sardinia, metasomatic alteration, 61; Scotland, vertical variations within flow, 60; Siberia, globular, mineralized, 157; South Africa, age, 165, magnetism, 337; Tarn, spilitization, 61; Tuscany, Na, K, Li, Rb in, 34; Uganda, alkaline, comp., 64, carbonatitic, comp., 148; Washington, andesitic, 151
Låven v. Norway

Lawsonite, structure, 177; Turkey, schists, 158
Layered igneous rocks, book, 173
Layered structure, Carinthia, of Pb-Zn ore, 184; Lovozero, of alkaline rocks, 64; Queensland, in tröctolite & gabbro, 64; Sierra Leone, rhythmic, 67; Transvaal, i. basic complex, 235
Layertonville v. California
Lazany v. Poland
Leaching, differential, 200
Lead, determination, 170, 259; in G-1, 198
in K-feldspars, 219; in minerals, use in age-determination, 3; Colorado, geochemical anomaly, 271; Georgian SSR, in altered magmatic rocks, 200; North America, in K-feldspar, plagioclase, 50; Norway, in alkali feldspars, 50, in microcline from granites, pegmatites, 50
— compounds; polymorphic transformation of oxide, 26; solubility product of sulphate, 24; synthesis of Pb-barylite, 109
synthesis of Pb, Ca, Zn silicates, 286
synthesis, X-ray of silicates, 108
Leadhillite, Massachusetts, 163
Lead isotopes, geological significance, 261
in least radiogenic terrestrial leads, 255
in modern volcanic extrusives, 255; in Sudbury-type ores, 275; in zircon, 87
Azov, in galena, 33; Bohemian massif, in galena, 183; British Columbia, in galena, volume of source rocks, 1; British Isles & Scandinavia, in ores; Lengenbach, in sulphides, sulphosilts, 290; Limburg, in galena, 256; United States, in igneous rocks, 34; Urals, in galena in pyrite ores, 22; Utah, in galena, 168
Lead minerals: chemical miscibility of Pb-Bi-sulphosilts, 20; secondary, 94; Nevada, Ag-bearing Pb-Mn oxide, anal., 126
Puy-de-Dôme, Pb-selenite (?), X-ray, 140
Lead ores: froth flotation, 103; Triassic Pb-Zn ores, 21; Algeria, comp. of Pb-Zn-Cu ores, 18; Arizona, oxidation of Pb-Zn ores, 21; Australia, S isotopes in sulphides, 291; Bonat, Pb-Ag ores, 280; Bristol, Pb-Zn ores, 154; Broken Hill, Australia, Pb-Zn ores, 21; Carinthia, layered, synsedimentary, 184; Carpathians, 274; Cumberland, structure of ore shoots, 97; Ebor, 276; France, Pb-Zn ores in Jurassic sediments, 21; Freiberg, Pb-Zn-Ag ores, 229; Germany, distribution of Pb, 290, Fe, Mn, Ca, Mg in carbonates, 56; Greece, sulphide-carbonate stalactites in Pb-Zn ores, 98; Hällfors, SnO₂ in, 100; Illinois, 244; Italy, Pb-Zn ores, 273, trace elements, S isotopes in, 273; Kutum, comp. of Pb-Zn ores, 20
Limburg, age of Pb-Zn ores, 256; Mississippi valley, calcite in Pb-Zn ores, 21; New South Wales, regional metamorphism, 273; Norway, 98; Osetia, 273; Příbram, mineralogenesis of Pb-Zn ores, 184; Rajashan, 273; Sardinia, Pb-Zn ores, 97, 98
Silesia, trace elements in, 290; Silesia-Cracow, Pb-Zn ores, 154, 184; Soviet Central Asia, Ga, In in Pb-Zn ores, 33; Spain, comp. of Pb-Zn ores, 21; Transbaikal, Pb isotopes in, 33; Transbaikal & Soviet Central Asia, rare elements in Pb-Zn ores, 184; Turkey, Pb-Zn ores, 272, 273; Yukon, 98, geochemistry of Pb-Zn-Ag ores, 98
Lebach v. Germany
Le Cave v. Italy
Le Chevallie v. France
Lecontite, structure, 181
Leesburg v. Virginia
Leeuwfontein, Transvaal v. South Africa

egnickie Pole v. Poland
eicestershire v. England
eichtenberg v. Germany
ena, Siberia v. Russian SFSR
engenbach v. Switzerland
engenbachite, rotation properties, 145
eolo mts., Transvaal v. South Africa
epidolite, Argentina, 281; Beauvoir, in albite, 148; India, comp., 136
epontine Alps v. Switzerland
epite, Dalarna, with ore deposits, 146; Sweden, with sulphide ores, 156
eptochlorite ore, Argentina, 278
eptynite, Ce, Gd in zircon, 35; Mauritania, 45; Spain, 332; Sudetes, 72
eskraum Museum, 338
esser Antilles v. West Indies
esser Caucasus v. Azerbaijan SSR
etovice v. Czechoslovakia
euchenbergite, Pyrenees, formation temperature, 330
eucite, replaced by analcite, feldspar, nepheline, augite, 320
eucite hills v. Wyoming
eucitite, anal., 320
eucogabbro, Queensland, comp., 64
eucogranite, Izera mts., with gneiss-schist intercalations, 232; Sudetes, 72; Wichita mts., 65
eucoophane, Norway, 267
eucoophoenite, m- & o-forms, 94; optical absorption, 265
eucoophosphate, Virginia, 79
evaporation melting apparatus, 24
evo-Ingoda, Siberia v. Russian SFSR
ewisian rocks, Scotland, 315, 332
henice v. Czechoslovakia
herzolite, melting & phase relations, 287
iaotung peninsula v. China
ias rocks, Britain, 242
iauzun-en-Ollioix v. France
IBERIA, Goe range, Grand Bassa Co., metamorphic rocks, 248
abthenite, Saarland, 77
IBYA, dolomites, 58; paraffins in crude oils, 119
ifudzin, Soviet Far East v. Russian SFSR
ignite, electron paramagnetic resonance, 125; strip mining, 93; Hungary, Sr, trace elements in, 295
iha v. Congo
illanite, anal., X-ray, synthesis, 314; rotation properties, 145; Sweden, X-ray, 143
imberg v. Netherlands
imestone, C isotopes in, 118; dedolomitized, Ca isotopes in, 38; particle nomenclature, 327; production of fissures, 104; standard, comp., 32; Ariège, with Mg in microfissures, 38; Arizona, contact metamorphosed, thermoluminescence, 72; Baltic basin, C isotopes in, 202; California, metamorphosed, 142; Carpathians, distribution of elements, 202, in flysch, 154, radioactivity, 230; Dobrogea, comp., 243; Durham, dolomitic, comp., 147; Germany, Sr in, 38; Ghana, comp., 289; Hoppenstedt, 290; Illinois, quarrying, 241, resources, 23, thermal expansion, 250; Italy, with glauconite & coprolite pellets, 37; Kansas, Sr in carbonates, 290; Massif Central, enclaves in dyke, 156; Missouri, Kansas, & Oklahoma, altered by Zn-Pb ores; New Zealand, Se in, 39; Oklahoma, trace elements in, 202
limonite, authigenic in deep-sea sediments, 244; pseudomorphs after pyrite, 20; Amorri, manganeseiferous, X-ray, d.t.a., 55
linarite, Massachusetts, 163
Lincoln Co. v. Georgia

Ländener Mark v. Germany
Lindströmite, Sweden, X-ray, 143
Linear algebra, use in mineral classification, 79
Linnaeite, Argentina, 274; Japan, 163; Norway, comp., 310
— group, Kamchatka, X-ray, 275
Linsley pond v. Connecticut
Liquid immiscibility, formation of chromitite seam, 68
Liquids, condensation & evaporation, book, 88
Lismore, Victoria v. Australia
Listvenite, Mongolia, 321
Lisungwe valley v. Malawi
Litchfieldite, Ontario, with zoned inclusion, 330
Litharge, Massachusetts, 163
Lithic fragments, grain-size & sorting, 153
Lithiophilite, optical absorption, 265
Lithiophorite, Miyagi, comp., X-ray, d.t.a., 58; Virginia, X-ray, 141
Lithium, determination, 123; in metamorphism of granitoids, 199; in meteorites, 123, 299; in sedimentary rocks, clay minerals, 202; in waters, 119; Argentina, in pegmatites, 281; New Hampshire, substituting in riebeckite, 135; Sayan, in granitoids, 199; Tuscany, in acid rocks, 34
— compounds: Li aluminosilicate ceramics, 8; phase diagrams of sulphate, selenate, chromate, 26; structure of $\text{Li}_2(\text{Si}_{0.25}\text{Ge}_{0.75})_2\text{O}_5$, 267; water vapour adsorption on fluoride, 118
— W-Sn ores, Krušne hory, 19
Lithomarge, Cameroon & Gabon, 92
Little Rock v. Arkansas
Lizardite, comp., 308; Yugoslavia, structure, 268
Llallagua v. Bolivia
Loam, Vorkuta, interaction with aqueous solutions, 112
Locmaria v. France
Lodrino v. Switzerland
Loess, Bavaria, mineralogy, 12; Rhine valley, derived minerals, 328
Löllingite, Virginia, 79
Lomagundi v. Rhodesia
Lomonosovite, structure, 16, 182
Lonsdaleite, X-ray, 225
Loppen v. Norway
Loro v. Italy
Lorraine v. France
Losberg, Transvaal v. South Africa
Los Lecherones v. Argentina
Lossiemouth, Morayshire v. Scotland
Lourenço Marques v. Mozambique
Lovegné v. Belgium
Lovozero v. Russian SFSR
Lowell v. Vermont
Lower Tunguska river, Siberia v. Russian SFSR
Lubin v. Poland
Ludwigite, in glass furnace, 191; rotation properties, 145; Banat, anal., X-ray, d.t.a., 245; Khara-Ulakh, clastic, X-ray, 100
— vonsenite series, 128
Lueshe v. Congo
Lueshite, Kivu, anal., 312
Lugar sill, Ayrshire v. Scotland
Lugo v. Spain
Luminescence, of hackmanite, 220
Lunabas, 316
Lunarite, 316
Lunar phenomena v. Moon
Lusaka v. Zambia
Lutite, Caribbean, comp., palaeotemperature, 164

Lutsiro v. Rwanda
Lützow-Holm Bay v. Antarctica
Luzon, Philippines v. East Indies
Lydite, Hungary, with graptolites, 333
Lyell, mt., Tasmania v. Australia
Lys-Caillaouas (Caillouas) v. France

Macallisterite, Argentina, anal., opt., X-ray, d.t.a., 313
McClure mt. v. Colorado
Mcconnellite, Guyana, 127
Macedon, Victoria v. Australia
Mackelvite, morphology, 58
Mackinawite, in meteorite, 123; thermodynamic stability, 285; Cornwall, 77
Mád v. Hungary
MADAGASCAR, Manjaka, rhodizite, 180
Maden-Ergani v. Turkey
Madras v. India
Madukarai v. India
Mafic minerals, orientation in magmatic rocks, 229
Mafic rocks, flow differentiation in sills, 152; Japan, nodules, 228
Magadiite, Kenya, anal., X-ray, 129
Magadi lake v. Kenya
Magan, Siberia v. Russian SFSR
Magara v. Turkey
Maghemite, Australia, in basalt, 155
Magma, alkaline, 324; artificial, behaviour of Zr, 286; ascent through Earth's crust, 229; basaltic, evolution at high pressure, 152; basaltic, Ti during differentiation, 229; basaltic & rhyolitic types, 68; basic, formation & fractionation, 30; basic, interaction with pelitic materials, 152; elements during crystallization, 291; geophysical study, 229; granitic, origin, 238; order of crystal nucleation, 67; processes, 316; processes of mass exchange, 59; reaction with gabbro, 326; rheology & volcanism, 239; syenitic, crystallization of feldspars, 50; tholeiitic or plagioclase-rich, 68; Apennines, genesis, 325; Nevada, ash-flow, 315; Noril'sk, water in, 114; Tuva, syenitic & alaskitic, 239
Magmatic complex, comagmatism & metallogenetic specialization, 7; Caucasus, Cr, Ni in, 7
Magmatic rocks, K/Rb in, 34; leaching of U, 297; orientation of feldspars, 229; orientation of mafic minerals, 229; Belgium, 317; Donbas, comp., 115; Georgian SSR, Pb, Zn, Cu in, 200
Magmatism, simatic geosynclinal & orogenic sialic, 17; volcanic & plutonic domains, 315; Baltic shield, alkaline, 229; Bohemian massif, 272; Bulgaria, 319; Carpathians, 319; Romania, Alpine, 319, Laramian 319; South Africa, cratonic, 272
Magnesian kutnohorite, Japan, anal., 312
Magnesia-silicate refractories, Lower Silesia, 103
Magnesiochromite, hardness, magnetism, 223
Magnesioludwigite, 128
Magnesio-picotite, Sahara, in pyroxenite, comp., opt., 47
Magnesio-wüstite, oxidation-reduction, 25
Magnesite, identification, 259; IR absorption, 224; preparation for firing, 23; world resources, 22; Austria, deposits with talc, 281; Styria, pyrite in, 57
Magnesium, determination, 5, 86, 259; in belemnites, 206; isotopes in upper mantle, meteorites, 298; New Hampshire, lost from weathered silicates, 174
— compounds: bulk modulus of oxide, 75; cation migration in MgMn_2O_4 , 180; colour centres in oxide, 76; electron diffraction

Magnesium, (contd.)

of MgO , 180; optical spectra of aluminates, 180; plastic deformation of Mg aluminate spinel, 250; series $FeCr_2O_4-MgCr_2O_4$, 25; single crystals of $MgAl_2O_4$, 191; sintering of oxide, 105; solubility product of hydroxide, 24; stability of $MgAl_2O_4$, 25; synthesis, opt., X-ray of $Mg_2Cl_2SO_4 \cdot 8H_2O$, 106; synthesis, X-ray of $(Mg,Co)SiO_4$, $(Mg,Ni)_2SiO_4$, 286; synthesis, X-ray of spinel, Mg_2SiO_4 , 286; synthesis, X-ray of sulphate hydrates, 313

— minerals: disorder in CaMg-carbonates, 182

Magnet cove v. Arkansas

Magnet Cove mine, Nova Scotia v. Canada

Magnetism, ages of geomagnetic polarity epochs, 167; anisotropy of susceptibility of sands, 70; Earth's field in past, 161; geomagnetic polarity scale of time, 77; impregnation of weak sediments, 257; of deep-sea cores, 339; of iron oxide-hydrate particles, 77; of magnesiochromites, 223; of pyroxenes, amphiboles, 252; of titanomagnetite in basic volcanic rocks, 162; of trioctahedral micas, 336; polarity & igneous petrology, 60; remanent, of sediments, 336; variation in Earth's field with time, 161; Aberdeenshire, over gabbro, 161; Africa, of igneous province, 252; Arabia, of volcanic rocks, 337; Atlantic, of igneous rocks, 230; Avbrac, of lavas, 162; Australia, of hematite, 166; Eornholm, of granitoid rocks, 161; Cape Race, of continental shelf, 77; Colorado, of Jurassic & Cretaceous rocks, 168; Czechoslovakia, of hematite ores, cassiterite, 337; Etna, of lavas, 326; Europe, intensity, 80; Iceland, of lavas, dykes, 337; New Mexico, of volcanic rocks, 168; New Mexico & Arizona, of basalt flows, reversed polarity, 162; Norway, of dyke, 166; Oregon, polarity transition, 168; Pacific, 339; Quebec, of igneous rocks, 252; Scotland, of igneous & contact rocks, 337; South Africa, of lavas, 337, of red beds, 253; United States, of volcanic units, 337

Magnetite, crystallization in basic rocks, 323; erosion rate, 123; formed from decomposition of siderite, 27 · F_2 in, 204; in eclogitic assemblages, 287; IR absorption, 87; magnetism, 162; solid solution with ulvöspinel, 284; zoned crystals, 75; Azov, Ga in, 200 · Lanat, X-ray, d.t.a., 245; Bushveld, genesis, 236; Dashkesan, cubic, X-ray, 141; Leva, trace elements in, 186; Erzgebirge, in skarn rocks, 329; Germany, trace elements in, 140; Iceland, titaniferous, comp., 311; India & Greenland, element correlation, 311; Karamazar, In, Ti in, 200 · Missouri, trace elements, in 291; Pennsylvania, zoned grains in ores, 113; Quebec, comp., opt., 46; Khodopes, in pegmatite, 144; Sveti Anna, in basalt, anal., X-ray, 63

— ilmenite ore, Norway, TiO_2/Fe in, 59

— jacobsite series, comp., opt., 311; Buryat ASSR, Mn in, comp., 311

— ore, Andhra Pradesh, extraction of V, 103; Cognac, origin, 185

Magnetitite, Lushveld, comp., 236

Magnor v. Norway

Maimecha-Kotu (Maymecha-Kotuy), Siberia v. Russian SFSR

MAINE, Aroostook Co., ganophyllite, 314;

Deer isle, stilpnomelane, 314; Greenville, igneous, sedimentary rocks, 151; Swift river, Eryon, gold, 78

Makaopuhi, Hawaii v. Pacific Ocean

Makhtesh Ramon v. Israel

Malachite, structure, 181; Zambia, 274

Malacolite, Mysore, 47

Malacon, colloidal, anal., opt., X-ray, d.t.a., t.g.a., 45

MALAWI (NYASALAND), aegirine gneisses, 63; carbonatites, 234; Chilwa island, carbonatites, 25; Chimwadzulu hill, hornblende, 235; Kangankunde, apatite beforsite, carbonatites, 234, hyalophane, 235; Kirk range, geology, igneous & metamorphic rocks, 235; Lisingwe valley, igneous & metamorphic rocks, gold, 235; Mlindi, pyroxene, biotite, 235; Nkalonje-Matopon, fenite, orthoclase, foyaite, 234; Nsala, microfoyaite, carbonate rocks, 234; Ntonya, Zomba, age of syenitic & granitic rocks, 165; Solambidwe, alkaline rocks, 234; Shire highlands metamorphic rocks, 235; Songwe hill, phonolite, carbonatite, 234; Tundulu, carbonatites, 234

MALAYA, Sn minerals, 141; Sungai Lembing, Sn lodes, 187

Malcantone v. Switzerland

Malhada I impa v. Brazil

Mama, Siberia v. Russian SFSR

Manastir hills v. Bulgaria

Mangananatite, Nikopol, in Mn ores, comp., X-ray, 313

Manganese, determination, 4, 5, 85, 86, 87, 171, 172, 198, 207; determination of valency, 258; electron paramagnetic resonance in tremolite, 14; in meteorites, 123, 207; in minerals of ultramafic rocks, 114; in pelagic sediments, 87; in seawater, 41; in titanomagnetites, ilmenites, 223; in underground waters, 41; isomorphous with Fe, 94; Ariège, in limestone, 38; Iolite Sea, in concretions, 117; Guadaluja, in concretions, 154; Indian Ocean, in sediments, 293; Michigan, in dolomite & calcite, 142; Oregon, in tonalite, 236

— compounds: structure of Mn_2Si , 266; synthesis, X-ray of spinels, 105; synthesis of hydrogarnets, 8; synthesis of Mn-Ti spinels, Fe-Mn spinels, 191; X-ray of $Mn(Sn)O_4$, 127

— minerals: crystal-field spectra & chemical bonding, 265; Arkansas, 338; Madhya Pradesh, in metamorphic ores, 20; Montana, X-ray, 18; Philippines, X-ray, 279

— nodules, comp., 117; Mn-Fe nodules, 203; Pacific, spectrography, 202; Sicily, fossil, 242, 294

— ores, metamorphosed protores, 279; Algeria, Fe in, 277; Amorri, with todorokite, 56; Germany, 280; Ghana, comp., 289; Hungaria, 279; snore & pollen types, 80; India, 279; Iwate, vredenburgite-type intergrowths, 55; Morocco, 279; Nikopol, with mangananatite, 313; Shikoku, with braunite, ganophyllite, 49; Thailand, 280; Ukraine, precipitation, 279

Manganhercrite, New South Wales, comp., 305

Manganite spinels, crystall., 15

Manganocalcite, Sweden, anal., 143

Manganosite, optical absorption, 265

Mangerite, rare-earths, in 35; Norway, with fayalite, 316; Greenland, in charnockite rocks, 73

Mangualde v. Portugal

Manhan mine v. Massachusetts

Manicouagan, Quebec v. Canada

Maniema v. Congo

Manjaka v. Madagascar

Manshera, West Pakistan v. Pakistan

Mantiqueira mts. v. Brazil

Mäntyharju v. Finland

Manzanal v. Guatemala

Mapembe v. Congo

Marangudzi v. Rhodesia

Marble, C isotopes in, 39; Czechoslovakia, silicate-rich, 72; Massif Central, comp., 242; Norway, 316; Quebec, with phlogopite, 334; Romania, cipolin, 248; Switzerland, anorthite in, 51

Marbridge, Quebec v. Canada

Markburg-an-der-Lahn v. Germany

Marchagee, Western Australia v. Australia

Margarite, Côtes-du-Nord, in schists, 331 Oita, anal., opt., X-ray, 137

Margarosanite, synthesis, X-ray, 286

Marguerite bay v. Antarctica

Marianas islands v. Pacific Ocean

Marići v. Yugoslavia

Mariam island v. Indian Ocean

Maritime Alps v. France

Maritime Kray (Territory), Soviet Far East v. Russian SFSR

Markov multivariate schemes, 34

Markovo, Siberia v. Russian SFSR

Marl, Dobrogea, comp., 243; England & Wales, mineral suite, 13

Marlsburg v. Germany

Marl slate, Durham, comp., 147

Marmoraton, Ontario v. Canada

Marokite, South Africa, 338

Marquesas v. Pacific Ocean

Marritte, Linnatal, structure, 270

Mars, morphology, 300; origin of meteorites, 42

Maršíkovo v. Czechoslovakia

Martha's Vineyard v. Massachusetts

Martigné-Ferchaud v. France

Maruyama mine, Honshu v. Japan

MARYLAND, O isotopes in metasediment, 296; Annapolis, goethite replacing glauconite, 137; Cardiff, serpentine, 289; Woodstock, Baltimore, weathered granite

12

Marzell v. Germany

Mascot v. Tennessee

Maskelynite, in meteorites, 43

Mas Rouge v. France

Mass absorption coefficients, 86

MASSACHUSETTS, Manhan mine, Loudville, ore minerals, 163; Martha's Vineyard, tektites, 214

Mass exchange, in magmas, 59

Massif Central v. France

Mass spectrography, trace element analysis, 87

Masukwe v. Rhodesia

Mathematical geology, book, 9

Matola v. Brazil

Mátra mts. v. Hungary

Matsumae, Hokkaido v. Japan

MATURANIA, Amsaga, Atar, metamorphism, garnets, 45; Fort Gouraud, Fe ore, 279; Guelb Tenoumer, rhyodacite lavas, 321; Richat analcimolites, 329

Maydantal v. USSR

Maymecha-Kotuy, Siberia v. Russian SFSR

May-sur-Orne v. France

Mazé, Honshu v. Japan

Meach lake, Ottawa v. Canada

Mecsek mts. v. Hungary

MEDITERRANEAN SEA, U, rare metals in sediments, 201; Adriatic, aragonite in core, 241, sandstone carbonate rock, 242; Balearic, crustal section, 253; Stromboli, Lipari island, volcanic gas, 239

Medzev v. Czechoslovakia

Megayear, definition, 167

Meggen v. Germany

Meussen v. Germany

Melabasalt, Alto Vicentino, dykes, 232

selbourne mt. v. Antarctica
selanephelinite, Malawi, comp., 234
selanite, Quebec, comp., opt., 46; *v. andradite-melanite-schorlomite series*
selanotekite, phase relations, 108; synthesis, X-ray, 108
selanerite, Assam, encrusting coal, anal., opt., X-ray, 78
selca-Gube v. Ethiopia
selilitite, comp., Fe in, 133; in blast-furnace slag, 108; IR absorption, 133; Na-rich, IR, 133; *Quebec*, comp., opt., 46, in sedimentary xenolith, 138
seliphilite, Norway, 267
selles v. France
sellenbach v. Germany
selnikovite, synthesis, 285; thermodynamic stability, 285
selteigite, Arkansas, age, 256
selting law, at high pressures, 190
Mendeleyev volcano, Soviet Far East v. Russian SFSR
Mendene mine v. Czechoslovakia
Menderes v. Turkey
Menet v. France
Menilitite rocks, Carpathians, 117
Menzenschwand v. Germany
Merano v. Italy
Mercury, in chondrites, 209; in metamorphic rocks, 204; in meteorites, rocks, 123; *Bavaria*, in baryte, sphalerite, 33; *Crimian mts.*, in rocks, 115; *Kerch' peninsula*, 199; *Nikitovka*, vapour at ore-field, 298; *Yugoslavia*, geochemical prospecting, 119—ores, *Donets*, with bitumen, 291; *Kirghizia*, 272; *Koryak*, colloidal origin, 100; *Spain*, 275; *USSR*, 100
Merrimac v. California
Merumite, Guyana, = mixture, 127
Merwinite, platy, 8
Mesolithic deposits, Portugal, 82
Mesones v. Spain
Messeix v. France
Meta-arkose, Tampere, with primary textures, 246
Meta-autunite, Argentina, comp., X-ray, 313
Metaconglomerate, California, 333; *Finistère*, 247
Metadolerite, Malawi, comp., 235; *Quebec*, dykes, 151
Metagabbro, Germany, with pyrrhotite, magnetite, 140; *Malawi*, comp., 235; *Quebec*, comp., 99
Metagreywacke, metamorphism, 246; *Cottian Alps*, with jadeite, glaucophane, comp., 157
Metalliferous mts. v. Romania
Metallogenesis, typical features of provinces, 17; specialization, 7; *Andes*, belts, epochs, igneous rocks, 271; *Romania*, map, 271
Metallurgy of meteorites, book, 172
Metalmonosovite, structure, 16, 182
Metamorphic rocks, comp. of biotite, 136; cordierite-quartz intergrowths, 238; Hg in, 204; high-grade, grain contacts, 246; mechanism of orientation of minerals, 145; N in, 40; petrogenetic theories, 68; stability of pyroxenes, olivines, 110; with ultrabasic inclusions, 62; *Aar*, polymetamorphic, migmatitic, 247; *Alto Adige*, paragneiss, 248, synkinematic differentiation, 248; *Australia*, book, 261; *Canada*, comp. of shield rocks, 74; *Carpatho-Balkans*, 333; *China*, four formations, 248; *Elgin*, psammitic Moine, 317; *Ghana*, comp., 289; *Hungary*, 333; *India*, age, 2; *Japan*, sulphide & oxide minerals, 141; *New Zealand*, age, 168; *Novara*, 332; *Sassari*, 73; *Scotland*, age, 2; *Shantung*, age, 257; *Shetland*, comp., 73; *Singhkhum*, trace elements in, 112; *Sondrio*, mesozonal & epizonal, 248; *Turkey*, lawsonite-glaucophane facies, 158, 322
Metamorphism, behaviour of isomorphous mixtures, 204; behaviour of U, Th, 296; differentiation in crenulated schists, 73; facies series in various types, 157; garnet as grade indicator, 132; in mobile belts, 246; low-grade, of illite, 71; mineral distribution in orogenic belts, 73; orientation of andalusite, 332; reactions involving gas equilibria, 87; solution chemistry, 87; synkinematic growth of epidote, 73; *Aar*, 247; *Alps*, 173, 332; *Cascades, Washington*, with contemporaneous faulting, 65; *Ceylon*, hornblende granulite subfacies, 74; *Congo*, of sediments around Cu ores, 329; *Côtes-du-Nord*, greenschist facies, 331; *Darjeeling hills*, comp., of garnets 45; *Greina*, 247; *Hungary*, 333; *Karelia*, 149; *Massif Central*, two phases, 331; *Mauritania*, of Precambrian rocks, 45; *Mayo*, of Palaeozoic rocks, 156; *Norway*, of Precambrian, 157, of Precambrian & Caledonian, 73; *Poland*, of coal, 329; *Queensland*, differentiation, diffusion in veins, 64; *Seville*, of pelitic rocks, 217; *Spain*, genesis of glauconhane, 157; *Switzerland*, of granite, 332; *Tirschenreuth*, transition to gneiss & migmatite, 74; *Urals*, of Ti-Fe ores, 74, of subgreywackes, 155; *Washington*, prehnite-pumpellyite facies, 333—, contact, age variations & petrologic changes, 261; *Arizona*, of limestone, 72; *Australia*, trends in amphiboles, 217; *Maine*, aureoles around intrusion, 151; *Niza*, aureole around granite, 156; *Oslo*, pyrite-pyrrhotite transformation, 57; *Queensland*, of coal, 71; *Sassari*, aureole near igneous rocks, 74; *Scotland*, magnetism of sediments around igneous bodies, 337; *Siberia*, aureole around olivinite, 25—, impact, 87; *Saskatchewan*, in circular structure, 72—, progressive, 330; *Japan*, of basic rocks, 159; *Pyrenees*, of dolomites, 332—, regional, *Aldan*, behaviour of U, Th, 40; *Australia*, 261; *Canada*, fractionating effects, 74; *Carpathians*, 332; *New South Wales*, of Pb-Zn sulphides, 273; *North Carolina*, of adamellite pluton, 159; *Norway*, of sulphide ores, 330; *Pyrenees*, low-pressure facies, 331; *South Australia*, 74; *Thunder Bay*, 159; *Verbania*, three facies, 248; *Vitim-Patom uplands*, related mineralization, 183; *West Pakistan*, 150—, retrograde, 330; *Styria*, 247; *Uganda*, in granulite, 74—, thermal, behaviour of trace elements, 39; *Serbia*, around grandiorite, 232; *Tasmania*, of volcanic rocks, 72
Meta-peridotite, Norway, 316; *Quebec*, comp., 99
Metapyroxenite, Malawi, comp., 235
Metasedimentary rocks, Sweden, 155
Metasediments, Elgin, 317; *Finnmark*, 146; *Maryland*, O isotope equilibrium, 296; *Norway*, 316; *Caledonian*, 73
Metashales, Tien-Shan, V, Sn, Mn, P in, 97
Metasomatic rocks, Siberia, K-feldspars in, 50
Metasomatism, infiltration, 230; potassium of beryl, 134; role of textural-structural formations, 39; temperature distribution in hydrothermal mineralization, 72; *Bergell & Adamello*, 325; *Congo*, sodium, 325; *Nevada*, ore-deposition, 277; *Sardinia*, of volcanic rocks, 61; *Sierra Leone*, potassic, 234; *Sweden*, of leptites, 156; *Tien-Shan*, alkaline, 156; *United States*, around serpentinites, 228; *Venezuela*, 75
Metastrengite, structure, 181
Meta-variscite, structure, 181
Meteor crater v. Arizona
Meteorite collections, Western Australia, 301
Meteorite crater, Nördlinger Ries, 302; *Ries Kessel*, topography, 214
Meteorite falls :
Abet, 207, 209, 299
Admire, 300
Alais, 125, 208, 213
Alcaren, 120
Al Rais, 120, 209, 213
Amilia, 124
Amplev Bridge, 209
Ariseo, 124
Arizona, 301
Ashford, 43
Assisi, 43
Avoca, 301
Bibb's Mill, 43
Bilfou Downs, 43
Burrata, 121
Burwell, 43, 299, 300
B'th, 121
Bearham, 121
Bella River, 121
Bencubbin, 120
Beroni, 208
Bethany, 124
Bjälstok, 122
Bind, 122
Bischöfle, 124
Bishūnur, 208
Birnböle, 123
Bluff, 121
Bosnianska, 124
Boro San Donino, 210
Bovhole, 124
Brennerwörde, 121
Bruderheim, 207, 209, 298
Burnuu, 299
Bur-Gheliui, 120
Cachar, 124
Camino del Cielo, 301
Cañon Diablo, 124, 207, 211, 212, 301, 302
Canton, 43
Carraweana, 121
Cee Vee, 208
Chaitnur, 123, 207
Corbulla, 124
Cold Bokkeveld, 209, 213
Colomera, 212
Coonertown, 42
Cova Norte, 211
Cumberland Falls, 299
Cynthiana, 120
Duel Hill, 43
Ewla Station, 300
Eholt, 207
Elbowen, 42
El Burro, 124
El Tatio, 301
Eseobi, 123, 208
Estherville, 122
Fayetteville, 122
Felis, 207
Filomena, 211
Föllinge, 43, 125
Forest Vale, 299
Four Corners, 212
Frankfort, 121
Ghubbra, 210
Gibeon, 43, 124
Goaamus, 124
Goodland, 299
Grad, 299
Gravès, 123
Grassland, 208
Grosnaja, 209, 213
Hamlet, 209
Hariunra, 213
Harleton, 209
Henbury, 124, 302
Heredia, 208
Hesse, 208
Hoba, 123
Holbrook, 207, 213
Horse Creek, 300
Hvittis, 207
Indarch, 121, 123, 207
Indian Valley, 43
Ivuna, 125, 207, 209, 213
Jodzic, 122
Johnstown, 300
Juvinala, 122, 292
Kaba, 213, 299
Kangarali, 121
Kameelhaar, 124
Kapota, 121
Khor Temnik, 210
Knowles, 43
Kodaikanal, 124, 302
Kota-Kota, 121, 299, 300
Krasnojarsk, 300
Lance, 207
Lanzenkirchen, 300
Laurens County, 124
Leeder, 299
Leighton, 300
Linwood, 212
Magura, 42, 43
Marburg, 125
Marijali, 300
Menow, 208
Mezö-Madaras, 121, 209, 210, 299, 300
Michel, 125, 207, 213
Mócs, 207
Modoc, 121
Mokoia, 213
Monte Milone, 210
Moore County, 212, 208
Moorsfort, 121
Mount Edith, 212
Mount Ezerzon, 299
Mukerop, 124
Mundrabilla, 43
Murray, 207, 208, 212, 213
Narrabura, 42
Navajo, 123
Nedagolla, 211
Negrillos, 211
Netscháčevo, 43
Newport, 123
Nzawi, 121
N'Gouyeuma, 124, 211
Nogoya, 209, 213
Norfolk (Virginia), 43
Norfolk, 124
Norton County, 42
Novo-Urel, 44
Nueva Laredo, 122
Nularbar Plain, 124
Oakley, 300
Odessa, 42, 123, 124, 126, 207, 211, 212, 302
Ohuma, 300
Orgueil, 207, 212, 213, 300, 301
Ormans, 123
Pantar, 207
Pasamonte, 122, 208
Patwar, 211
Peace River, 207, 209
Petersburg, 122
Pine River, 212
Plainview, 207
Pollen, 209, 213
Pübrahim, 209
Pultusk, 122
Puripica, 211
Queensland, 43
Renazzo, 209, 213
Revelstoke, 225
Rio Loco, 211
Rose City, 121
Saint Mark's, 209, 299, 301
Saint Severin, 43, 209
San Martin, 211
Santa Rosa, 124
Sardis, 207
Scottsville, 43
Seeläsgen, 43
Serra de Mage, 122
Shalka, 300
Shaw, 209, 210
Sierra Gorda, 211
Sikhole-Alin, 124, 212
Sioux County, 122
Smithtonia, 124
South Oman, 121, 300
Spearman, 42
Springwater, 300
Stannern, 122
Steinbach, 124
Tadjera, 121
Tatahouine, 299, 300

Meteorite falls, (contd.)

Tennasilm, 209
 Thiel Mountains, 300
 Tieschitz, 300
 Tocopilla, 211
 Tolcua, 124, 212, 305
 Tombigbee River, 124
 Torre, 210
 Trenton, 211
 Tunuska, 42, 164
 View Hill, 43

Walters, 207
 Warrenton, 125
 Weatherford, 302
 Weekeroo Station, 212
 Wichita County, 124
 Winona, 299
 Wild Cottage, 300
 Wolf Creek, 124, 129
 Woodbine, 299
 Ysleta, 43

Meteorites, 42, 120, 207, 298; age of silicate inclusions, 212; band width in hexahedrites, 43; charged particle tracks, 261; chondrules, chondrites, 87; chronology, 300; cognate xenoliths in chondrites, 210; conference, 42; cooling rates of irons & stony-irons, 124; cosmic ray particles in near surface regions, 120; cosmogenic radioactivities, 209; cutting of stony-irons, 123; distribution of nuclear particles in irons, 212; electron microprobe study, 87; electron paramagnetic resonance, 125; equilibration in chondrites, 209; erosion rate of chondrite, iron, 123; evolutionary changes in stones, 300; fireballs, 299; formed from Apollo asteroids, 298; fossil charged-particle tracks, 208; frambooidal structures, 213; fusion crust, 301; Hg in chondrites, 209; historical survey, 298; hot-working effects in irons, 124; impact glass in eucrite, 214; light-dark structures in chondrite, 213; luminescence, 254; lunar bombardment, 254; mass spectrometry of organic constituents, 213; metallographic structure of octahedrite, 124; metallurgy, book, 172; microstructure of carbonaceous chondrites, 300; oriented lamellae in octahedrite, 43; origin from Moon & Mars, 42; origin of chondrules, 300; polymict structure of chondrite, 209; post-formational history of hypersthene chondrite, 121; Pu fission tracks in iron, 124; Pu/Xe, 1/Xe decay intervals, 207; radioactivity & cosmic rays, 209; shock effects in irons, 123; shock-induced changes in irons, 42; space erosion rate of stony-iron, 211; stable isotopes in, 228; structures in carbonaceous meteorite, 301; thermal history of irons, 210; tracks of primary cosmic rays, 208; trapped Xe & classification of chondrites, 300; unequilibrated ordinary chondrites, 299; U in chondrites, 43

—, chemistry, abundance patterns of elements, 120; Al, V, Mn, Au in, 207; aliphatic hydrocarbons in, 125; aluminium isotopes in, 209; alkalis, alkaline earths, rare-earths in chondrites, 209; anal. of aubrite & inclusions, 210; anal. of enstatite-olivine chondrite, 299; anal. of octahedrite, 43; anal. of olivine-hypersilene chondrite, 211; anal. of pyroxene-plagioclase achondrite, 299; anal. of stony-iron, 302; aromatic hydrocarbons, 213; Br in, 207; C & rare gases in chondrites, 212; chemical-petrological classification of chondrites, 120; C in chondrites, 209; Cl, Br, I in, 207; Cl in irons, 124; comp. of chondrite enclaves, 120; comp. of chondrites, 120, 121; comp. of finest octahedrite, 125; comp. of groundmass of chondrules, 121; comp. of hydrocarbon-bearing chondrite, 299; comp. of impact glass, 302; comp. of octahedrites, 43, 301; comp. of pallasite, 125; comp. of stones & iron, 299; comp. of ureilites, 124; comp., X-ray of carbonaceous chondrite, 125; condensation of elements, 120; Cu in chondrites, 300; Eu in achondrite minerals, 292; Fe, Ni, Co, Ca, Cr, Mn in stones, 123; Ga, Ge in

irons, 302; Ge, Ga, Ir, Ni in irons, pallasites, 211; Ge in irons, 212; heavy rare gases from chondrite, 300; Hg in, 123; I, U, Te, in 122; Kr in achondrites, 208; Kr, Xe isotopes in graphite, 301; lanthanide abundances, 32, 42; Li in, 123, 299; Mg in, 298; minor elements in enstatite chondrites, 122; Mn, Na, Ga, Cu, Au, Cr in, 207; N compounds, 213; neutron produced phosphorus isotope, 43; Ni, Ga, Ge in, 212; Ni, Ga, Ge, Ir in, 124, 211, 301; Ni isotopes in 301; noble metals in, 43; organic compounds & diamond in ureilite, 44; organic constituents, 125; origin of Xe, 208; Os in, 212; P in octahedrite, 212; precious metals in chondrites, 125; primordial gases in howardite, 122; radioactive elements in, 123; rare gases in achondrites, pallasites, 300; rare gases in amphotericite, 301; rare gases in chondrites, 122; rare gases in stones, 208; Rb, Sr isotopes in octahedrite, 302; Re, Os in, 123; Sb in, 207; Si in, 207; Si in chondrules, 209; spallogenic rare gases, 301; spallation xenon, 300; trace elements in irons, 211; tritium in irons, 212; U in enstatite chondrite, 299; variations in rim & plains specimens, 124; V in irons, 301; Xe in chondrites, 213; Xe, Kr from heated achondrite, 208; Xe, Te in, 208

—, minerals, asymmetrical magnetite crystals, 213; chromite & chromite chondrules, 210; chromite in chondrites, 122; coexisting sphalerite, daubréelite, troilite in iron, 210; comp. of enstatite in achondrites, 299; comp. of olivine, pyroxene, 300; crystallization in chondrules, 120; diamond in ureilite, 44; in olivine-bronzite chondrite, 43; kamacite lamellae in octahedrite, 43; kamacite-taenite relationship in irons, 211; macchinawite, pentlandite, native Cu in pallasite, 123; maskelynite in stones, 43; nickel-iron troilite in chondrites, 123; olivine in chondrites, 299; olivine in enstatite chondrites, 121; olivine, pyroxene in carbonaceous chondrites, 213; origin of cohenite, 302; perryite, kamacite in chondrites, 300; petrology of eucrites, howardites, mesosiderites, 121; pyroxenes in, 299; reevesite, cassidite in weathered iron, 129; roedderite in octahedrite, 124; X-ray study of chondrites, 210; X-ray of cosmochlorite, 305; zincian daubréelite troilite from chondrites, 299

Meteoric dust, 153

Meteoric spherules, density, 215; in salt samples, 302

Methane, melting curve, 24

MEXICO, jalpaite, 222; *Baja California*, marine phosphorites, 244; *Basin range, Sonora*, age of rocks, 261; *Carmen island, Baja California*, salt deposits, 71; *La Guadalupe Arcos mine, Zacualpan*, selenian polybasite, 140; *Las Chispas mine*, selenian polybasite, 140; *Sonora*, peanut obsidian, 253

Miao-Chiang, Soviet Far East v. Russian SFSR

Miargyrite, synthesis, X-ray, 107

Mica, forms of U, 218; high-pressure deformation, 302; K isotopes in, 33; magnetic susceptibility, 336; new, synthetic, 8; polycrystalline, synthesis, 104; structural formulae calculations, 84; Th in, 218; tracks caused by electron showers, 137; transformed into vermiculite, 263; trioctahedral, brittle, 137; trioctahedral, structure, 178; world resources, 22; X-ray determination of Fe,

259; *Alps*, age, 165; *Andhra Pradesh*, with linear structures, 49; *Bihar*, green in khondalite, anal., opt., X-ray, 48; *Elba*, intergrowth of phlogopite & pennine, 49; *Kola*, borehole prospecting, 102; *Kyoto*, white, in ultrabasic rocks, 136; *North Carolina*, 281; *Transbaikal*, in Sn-W ores, anal., opt., X-ray, 306

—, Li, *Colorado*, comp., 136

— group, nomenclature, 48

MICHIGAN, O isotopes in Fe formation, 296; *Geneva-Davis mine, Gogebic*, dioctahedral chlorite, 14; *Kearsarge*, Cu-Ag in amygdaloid, 54; *Tracey mine*, dioctahedral chlorite, 14; *White Pine*, Cu-Ag ore, 54

Micrinite, 240

Microautoradiography, 6

Microbial sulphur cycle, 38

Microcline, formed from beryl, 134; growth rate in pegmatite, 113; K isotopes in, 33; paramagnetic resonance of Fe, 15; reciprocal lattice angles, 51; resistivity, 77; separation by heavy liquid fractionation, 258; Si, Al distribution, 15; *Allier*, epitaxial with plagioclase, 138; *Assynt*, in syenite, 147; *Baikal*, alkali metals, Be in, 50; *France*, in augen gneiss, 73; *Fukushima*, IR, 336; *Karelia*, rare alkalies, Th in, 199; *Mozambique*, X-ray, 220; *Nevada*, coexisting with orthoclase, 65; *Norway*, age, 166, in augen gneiss, 50, in granite, gneiss, 331; Pb in, 50

— low albite series, X-ray, 219

Microdiorite, *Kazakhstan*, dyke, 152

Microfayaita, *Malawi*, comp., 234

Microlite, *Rwanda & Congo*, in pegmatite, 322; *Transbaikal*, anal., 55

Micrometric analysis, grain-size determination of minerals, 257; granulometric analysis of rocks, 169; modal analysis by point counting, 3; mounting of very small particles, 257; particle-size analysis of clays, 89; recording eyepiece micrometer, 169

Microperthite, *Assynt*, in syenite, 147

Microprobe v. electron microprobe

Microquartzite, *Manche*, organic matter in, 294

Microscopy, attachment for sampling thin sections, 3; mounting of very small particles, 257; recording eyepiece micrometer, 169; rotatable slide ring holder, 169; work of H. C. Sorby, 253

Microsyenite, *Malawi*, comp., 235

Mid-Atlantic ridge v. *Atlantic Ocean*

Middleton, *Ontario v. Canada*

Midlands v. *England*

Midway, *Derbyshire v. England*

Mifune, *Kyushu v. Japan*

Migmatite, books, 88, 262; geobarometer, 145; *Aar*, 231, origin, 247; *Côte-d'Or*, 331; *Norway*, 157, 331; *Pyrenees*, form of zircon, 315

Migmatization, *Mauritania*, 45

Mihalıççık v. *Turkey*

Mihara mine, *Honshu v. Japan*

Mikhailovka v. *Russian SFSR*

Mikolajki lake v. *Poland*

Millerite, *Argentina*, 274

Minas Gerais v. *Brazil*

Mindouli v. *Congo*

Minera, *Denbighshire v. Wales*

Mineral data, 44, 131, 215, 303

Mineralization, *Derbyshire*, in Triassic sediments, 185; *India*, radioactive, age, 2; *South Africa*, ortonitic, 272; *United States*, major belts, 272; *Vitim-Paton uplands*, related to regional metamorphism, 183

Mineralogy, classification, 316; current

ineralogy, (contd.)
 trends, 79; experimental, technical, 7; textbook, 172, 261; use of principal component analysis, 48
 inerals, anisotropic, finite strain theory, 160; book, 7; classification using linear algebra, 79; comp. of coexisting variable mixtures, 4; composition of liquid inclusions, 4; computer programme for microprobe data, 84; crystal chemical calculations, 4; crystallochemical classification, book, 7; defects of artificial fibres, 8; density separator, 169; electron-hole centres, 265; element ratios in crystallization, 111; emission spectrography, 5; formulae derived from chemical analyses, 4; genetic classification of deposits, 17; growth rate in minor intrusions, 113; identification by thermal decomposition, 259; IR absorption spectra, 58; IR pleochroism, 336; mixed-layer, as one-dimensional crystals, 14; molar volumes, X-ray data, 145; paragenesis, review, 39; reference books, 6; role of hydrogen-oxygen ions, 266; thermo-electromotive force effect, 161; sheet, nomenclature, 48; strength of bonding forces, 265; Moravia, book, 88; Swiss Alps, book, 173
 ineral specimens, book, 262
 inette, *Corsica*, comp., minerals, 48, with priderite, 223
iniera del Ginevra, Elba v. Italy
INNESOTA, Duluth, layered basic rocks, 173
 inor elements v. trace elements
 inor intrusions, rate of mineral growth, 113
iniusinsk (Minussinsk), Siberia v. Russian SFSR
Inverine, Cornwall, with kaersutite, 218
irokšov v. Czechoslovakia
ISSISSLIPI, Greenville, Th isotopes in sediments, 201
ississippi river v. United States
ISSOURI, age of kimberlite, 256; altered limestone near ores, 21; magnetites, hematites, 291; *Boss-Bixby*, magnetites, 291; *Bourbon*, magnetites, hematites, 291; *Cedar hill*, hematite, 291; *Iron mountain*, magnetites, hematites, 291; *Pea ridge*, magnetites, hematites, 291; *Pilot Knob*, hematite, 291
Missouri mine v. Colorado
Itaki, Honshu v. Japan
iyake island v. Japan
Miyazaki mine, Honshu v. Japan
 fixed-layer minerals, as one-dimensional crystals, 14
Mlindi v. Malawi
Modal analysis v. micrometric analysis
Modenese Apennines v. Italy
Mohorovičić discontinuity, 287
Moidart, Inverness-shire v. Scotland
Moissanite, Azov, in volcanic breccia, X-ray, 54; *Siberia*, in contact aureole, opt., X-ray, 54
Moke creek, South Island v. New Zealand
 Molar volumes, of minerals, 145
Molasse, Carpathians, origin, 243
 Moldavites, causes of strain birefringence, 44; elastic properties, 214; in polarized light, 214; *Bohemia*, Muong Nong type, 44
Mollusc shells, C, H, N in, 116; Sr in, 202
Molybdenite, coordination of Mo, 94; polytypism, 16; *Australia*, Re in, 57; *Romania*, Re in, 222, Re/Mo in, 57; *Styria*, 338; *Wallis*, 185
 — ore, *Bohemia*, 100; *British Columbia*, 96; *Krušné hory*, 19
Molybdenum, determination, 171, 259; in G-1, 198; in river waters, 204; in vapour phase of molybdate solutions, 193; stability of water-soluble forms, 26; *Black & Mediterranean Seas*, in sediments, 201; *Colorado*, geochemical anomaly, 271; *Tatras*, in graphitoid schist, 39; *Tien-Shan*, in sedimentary rocks, 202; *Yakutia*, in ultrabasic rocks, 112
 — compounds: phase composition in oxides, 9
 — minerals: *Pakistan*, 101
 — ores, *Transbaikal*, Rb, Li, Ba, Sr in wall-rock metamorphism, 199
Molybdate, Bohemia, 101
Monazite, controlled leaching, 167; extraction of U, 189; reflectance spectrum, 58; world distribution, 97; *Bulgaria*, in pegmatite, 273; *Dnieper*, rare-earths in, 198
Moncha (Monche) v. Russian SFSR
Monchegorsk v. Russian SFSR
Monchiquite, Alto Vicentino, 232; *Malawi*, comp., 235
Mondane v. France
MONGOLIAN REPUBLIC, *Sayan Shanda*, ultrabasic rocks, 321
Mono Co. v. California
Montagne-Noire v. France
MONTANA, isotopic geochronology, 261; sedimentary rocks, 69; *Phillipsburg*, *Granite Co.*, Mn ores, Ag, Zn in veins, 18; *Stillwater*, layered intrusion, 173, ultramafic cumulate, 227
Mont-Blanc v. France
Montclar v. France
Mont-Dore v. France
Montevecchio, Sardinia v. Italy
Montezuma v. California
Monticellite, reaction with olivine, 230; *Bushveld*, in skermanitefels, 245; *Quebec*, comp., opt., 46
Montferrero v. Italy
Montmorillonite, adsorbed water, 180; at high-temperatures, pressures, 10; authigenic in deep-sea sediments, 244; cation-exchange capacity, 89; change on heating, X-ray, 169; cooling coefficient, 263; derivatograph analysis, 174; diffusion coefficient, 263; flocculation of suspensions, 262; glow curve, 89; heterometric titration, 262; hydrothermal alteration to kaolinite, IR, X-ray, 90; ion-exchange isotherms, 174; removal of Al hydroxide, 262; a-triazine adsorption, 263; structure, review, 10; surface conductivity, 263; synthesis, 288; use in ceramics, 176; *California*, in areas of land subsidence, 12; *Carpathians*, formed from tuff, X-ray, 176; *Corsica*, formed from olivine, opt., X-ray, 48; *Giessen*, thermal, 12; *Japan*, IR absorption, 90; *Paris basin*, 261; *Poland*, 243; *Pyrenees*, in marls, 92; *Sicily*, formed from hyaloclastite, 195; *Slovakia*, altered to cristobalite, 245; *Vauclusse*, in Miocene, 174
 — Cr-, v. volkonskoite
 —, organo-, degree of interstratification, X-ray, 91; electron microscopy, 174
 — group, heats of dehydration, 10; synthesis, structure, 10
 — hydromica, *Azerbaijan*, anal., 264
Montreal, Quebec v. Canada
Monzonite, Koryak mts., comp., 233
 —, quartz, *Maryland*, weathering, 12
Moon, capture by Earth, 254; comp. of lunabas, lunarite, 316; convection & lunar core, 255; density of soil, 80; dynamical evolution, 254; dynamics, 253; electrical conductivity, 254; gamma-radiation from surface, 254; internal structure, 254; IR reflectance spectra of rocks, 76; luminescence, 254; lunar radio brightness, 254; mapping by IR spectra, 80; meteoritic environment, 254; moments of inertia, 253, 254; morphology, 300; origin of meteorites, 42; physics, 253; Ranger pictures, 254; region of Mare Nubium, 254; review, 339; sedimentary rocks, 339; surface composition, 253; surface materials, 254; surface processes, 254; thermal effects on figure, 254; thermal radiation, 254; tidal friction, 254; volcanic rings, 69; water on, 254
Moorea v. Pacific Ocean
Moorhouseite, Nova Scotia, comp., opt., X-ray, 131
Moravia v. Czechoslovakia
Mordenite, altered to kaolinite, 289
Møre v. Norway
MOROCCO, Mn ores, 279; *Anti-Atlas*, age of granites, 81; *Azegour*, Be in W-Mo-Cu ore, 271; *Senoual*, silicified wood, 164
Morogoro v. Tanzania
Morphometry, of sands, 240
Morro do Ferro v. Brazil
Mortar, of boron carbide, 170
Morvan v. France
Morvern, Argyllshire v. Scotland
Mosaboni mines v. India
Mosandrite, Langesundsfjord, altered to fluorite, ramsayite, 53
Mosimann's correlation coefficient, 258
Mössbauer effect, 79; applied to mineralogy, 266; Fe in coal, 117; in cubanite, sternbergite, 95; in hercynite, 190; in iron silicates, 177; in neptunite, 180; in orthopyroxenes, 93
Mountain Lake mine v. Utah
Mount Angelo, Western Australia v. Australia
Mount Morgan, Queensland v. Australia
Mount North, Western Australia v. Australia
Mountsorrel, Leicestershire v. England
Moura-Barrancos v. Portugal
Mozambique, Alto-Ligonha, pegmatitic feldspars, 220; *Lourenço Marques*, clay minerals, 175; *Muiane*, *Zambezia*, cookeite, 308; *Naipa*, *Alto Ligonha*, herderite, 58; *Zambesi* river, age of rocks, 165
Mpande v. Zambia
Mud, biogenic migration of Co, 205; *Bay of Biscay*, trace elements in, 37; *La Rochelle*, amino acids in, 240; *Pacific*, spectrography, 202
Mudstone, Donbas, B in, 293; *New Zealand*, Se in, 39; *Siberia*, hydrocarbons in, 116; *Urals*, tuffaceous, comp., 155
Mugearite, Reunion, sill, 148
Muge river v. Portugal
Muhurgue v. Rwanda
Muiane v. Mozambique
Mullaley, New South Wales v. Australia
Müllerite, Portugal, X-ray, d.t.a., 175
Muller law, in Acantharia skeleton, 80
Mullite, ceramics, 8; free energy of formation, 24; heat of formation, 29
Multivariate analysis, Markov schemes, 35; of tektite composition, 44; of sedimentary rocks, 327
Mul'vodzha v. Tadzhik SSR
Munilkhan creek, Siberia v. Russian SFSR
Munster valley v. Germany
Muong Nuong v. Vietnam
Murmanite, Lovozero, structure, 268
 — lomonosovite group, structure, 16, 182
Muskrisk, Mayo v. Ireland
Muscovite, age by fission-track counting, 256; cation-exchange capacity, 89; cooling coefficient, 263; dehydration,

Muscovite, (contd.)

190; electron bombardment, 288; epitaxial growth of NaCl, 111; epitaxy, 161; from granitoid rocks, Ta, Nb in, 49; interferometry, 160; order-disorder of Al-Si, 95; Rb in, X-ray, 136; structure, 178; Ta, Nb in, 35; thermodynamics, 110; X-ray diffraction, 84; *Alto Adige*, in metamorphic rocks, comp., 248; *Antarctica*, age, 1; *Azov*, Ga in, 200; *Baikal*, alkali metals, Be in, 50; *Karelia*, Rb, Cs, Be, Sn, Sc in, 199; *Kyoto*, X-ray, 136; *Sudestes*, in quartzite, anal., 49; *Toyama*, anal., opt., X-ray, age, 136; *Ukraine*, opt., 303; *Washington*, structure, 268
—, Ba-V, *California*, X-ray, 136
Muskox, Northwest Territories v. *Canada*
Musonoi v. *Congo*
Musonoi v. *Congo*
Musonoi v. *Congo*
Muswellbrook, New South Wales v. *Australia*
Mysore v. *India*

Nabburg-Wölsendorf v. *Germany**Nagai*, Honshu v. *Japan**Nagano*, Honshu v. *Japan**Nagpur* v. *India**Nahal Ayalon* v. *Israel**Nahe* v. *Germany**Naipa* v. *Mozambique**Nakanomata* mine, Honshu v. *Japan**Náměst* n.O. v. *Czechoslovakia**Nandewar* mts., New South Wales v. *Australia**Nanetsu* mine, Honshu v. *Japan**Nasonite*, polymorph, synthesis, X-ray, 286*Naters* v. *Switzerland**Natrolite*, crystallization field, 198; *Lisbon*, in andesite, 148; *Moravia*, anal., opt., X-ray, d.t.a., t.g.a., 52; *Niigata*, comp., 221; *Nova Scotia*, X-ray, 52; *Ontario*, in litchfieldite, 330*Naustdal* v. *Norway**Navarino* island v. *Chile**NEBRASKA*, sedimentary rocks, 69*Negev* v. *Israel**Nelsonite*, origin, 284*Nenadkevichite*, *Virginia*, 79*Neomagma*, New South Wales, sulphide, 273*Neon*, in meteorites, 208*Neotocite*, *Arkansas*, 338*NEPAL*, geology, 322; *Kali Gandaki valley*, age of rocks, 82*Nepheline*, gas-liquid inclusions, 282; paragenesis with alkali feldspar, 283; temperature of crystallization, 283; *Etna*, in lava, 318, in lava, X-ray, 61; *Khibiny*, with villiaumite inclusions, 63; *Lovozero*, homogenization temperature, 59; *Norway*, in pegmatite, age, 2; *Quebec*, comp., opt., 46; *Silesia*, in basalt, 63; *Urals*, coexisting with feldspar, comp., 283
—, carnegieite group, synthesis, 288
—, pyroxene rocks, *Siberia*, in ultrabasic massif, 68*Nepheline* syenite v. syenite, nepheline
Nephelinite, *Kuznetsk Alatau*, anal., 233
Nephrite, sources, 261; *Nagano*, anal., opt., 308*Neptunite*, Mössbauer spectrum, 180; structure, 177*Nera*, *Siberia* v. *Russian SFSR*Net-veining, *Iceland*, by granophyre, 60*NETHERLANDS* (HOLLAND), viridine, 303; *Ameland*, *Friesian islands*, biosynthesis of pyrite, 107; *Betuwe*, volcanic glass, 327; *Limberg*, age of Pb-Zn ores, 256*NEVADA*, ash-flow magmas, 315; *Aurora* mine, *Hamilton*, aurorite, argentian todorokite, Ag-bearing Pb-Mn oxide, 126;*Gabbs*, *Nye Co.*, artinite, 78; *Kimberly*, delafoelite, 141; *Nevada test site*, zeolitized tuffs, 160; *Steamboat springs*, drill holes in granodiorite, 97; *Tem Puite*, W-Cu-Ag ores, 277; *Toquima mts.*, *Nye Co.*, baryte, 23; *West Humboldt range*, *Pershing Co.*, orthoclase, microcline, 65*New Amsterdam* islands v. *Indian Ocean*
Newberryite, formed from struvite, 313; X-ray, 192*New Brunswick* v. *Canada**New Brunswick* v. *New Jersey**Newburgh* v. *New York**New Caledonia* v. *Pacific Ocean**Newcastle*, *New Brunswick* v. *Canada**New England* v. *United States**New Guinea* v. *East Indies**NEW HAMPSHIRE* Li ions in riebeckite, 135;*Baker river*, *Warren*, gold, 78; *Chandler Mills* mine, *Newport*, hühnerkobelite, tourmaline, dickinsonite, 78; *Charles Davis* mine, *North Groton*, roscherite, 163; *Littleton*, anatase, brookite, 79; *Palermo* mine, *North Groton*, hühnerkobelite, 78; *West Thornton*, weathering of silicate minerals, 174*New Idria* v. *California**New Idria* mine v. *California**NEW JERSEY*, age of syenites, 256; *Buckwheat* mine, *Franklin*, chlorophoenicite, 338; *Charlotte* mine, *Cranberry lake*, pegmatite minerals, 18; *Franklin*, antimoniian groutite, 56, bannisterite, 314, barylite, 109, gageite, 221, rare minerals, 79, larsenite, 267; *New Brunswick*, thermoluminescent calcite, 338; *Sterling hill*, voltzite, 57; *Summit quarry*, *Springfield*, greenockite, minerals, 78*NEW MEXICO*, age, origin of Cu ore, 113; magnetism of basalt, 162; Pb isotopes in igneous rocks, 34; *Burro mts.*, ore-deposits, 272; *Rio Grande*, age of volcanic rocks, 168; *Santa Rita*, *Grant Co.*, hypabyssal rocks, trace elements, 65*New minerals*, 126, 225, 314—, unnamed: hydrated polyarsenite of, iron & calcium, anal., opt., X-ray, d.t.a., 130; sulphide of Ge, Cu, 225; *Ditráu* carbonate, anal., opt., X-ray, 128; *Guyana*, Zn-Cr spinel, 127; *Monchegorsk*, Pd bismuthide, 226; *Nevada*, Ag-bearing Pb-Mn oxide, anal., 126; *New Brunswick*, basic Zn carbonate, anal., X-ray, IR, d.t.a., 128; *Siberia*, palladium compounds, 226*New Quebec*, *Quebec* v. *Canada**New Russia* v. *New York**New South Wales* v. *Australia**NEW YORK*, age of kimberlites, 256; age of shales, 81; banded massive pyrite, 338; *Adirondack* mts., biotite, garnet, orthopyroxene, 136; *Catskill* mts., clay, clay minerals, 13; *Chittenango falls*, celestine, 79; *Newburgh*, graphite, 338; *New Russia*, *Essex Co.*, apatite in pyrrhotite, 78; *Tilly Foster* mine, serpentine mineral, 135*NEW ZEALAND*, age of basalt, andesite, 2; hydrothermal metamorphism of sedimentary rocks, 72; Pliocene-Pleistocene boundary, 256; Se in soils, 13, 39—, NORTH IS., age of basalts, 256; *Cape Colville peninsula*, age of rocks, 2; *Cuvier island*, age of rocks, 2; *Hamilton basin*, pumice, 327; *Rotorua*, thermal waters, 41; *Taupo*, basaltic, andesitic, & rhyolitic rocks, 325, leached pumice-glass, 315; *Waikato*, volcanic ash, 327

—, SOUTH IS., age of igneous & metamorphic rocks, 256; age of metamorphic

rocks, 168; *Collins river*, serpentinite spilitite, greywacke, 65; *Moke creek* *Wakatipu*, pyrrhotite, sulphide minerals 19; *View Hill*, meteorite, 43*Nicarao* v. *West Indies**Nichinan-chō*, *Honsiu* v. *Japan**Nickel*, determination, 85, 86, 170, 171; in meteorites, 123, 211, 212, 301; in meteorites, dunite, 301; in minerals of ultramafic rocks, 114; *Africa*, in basalts 148; *Black & Mediterranean Seas*, in sediments, 201; *Caucasus*, in magmatic complex, 7; *Finland*, partition coefficient in gabbro, 228; *France*, in volcanic rocks 230; *Mont-Dore*, in lavas, 293; *Noril'sk*, in minerals & gabbro-dolerite, 114; *Switzerland*, serpentinite, 274; *USSR*, mineralization of intrusions, 307— compounds: orthosilicate, 7; synthesis opt., X-ray of pyroxene, 109; synthesis of X-ray of NiAl_2O_4 , 25; synthesis of manganite, 105; X-ray of ordered Ni_2Mo_3 —ores, oxide-type, supergene, 275; *Québec* geothermometry, 99; *Rhodesia*, Ni-Cu ores 186; *Sudbury*, zoned Ni-Cu ores, 18*Niğde* v. *Turkey**NIGER*, *Air*, anorthosites, granites, 152*NIGERIA*, myrmekite in charnockite, 59 paraffins in oil, 119; *Benue*, oligoclase andesine in basalt, 321; *Egbé*, *Kabba* nigerite, 15*Nigerite*, identification, 141; *Nigeria*, X-ray 15*Niggli* norms, 170; calculation, 258*Nikitovka* v. *Ukrainian SSR**Nikopol* v. *Ukrainian SSR**Niobates*, book, 6*Niobian* perovskite, definition, 127*Niobium*, determination, 171; in granitoid micas, 49; in muscovites from pegmatites 35; in nepheline syenites, 35; *Africa*, in basalts, 148; *Colorado*, in carbonatite complex, 96; *Transbaikal*, in wolframite, 224

— compounds: structure defects in oxide, 22

Niobiotantalite v. columbite-tantalite*Nissyo* mine, Honshu v. *Japan**Nitrides*, book, 6

Nitrogen, in mollusc shells, 116; in metamorphic rocks, 40; melting curve, 25

— compounds, in meteorites, 213

Niza v. *Portugal**Nizhni Tagil* v. *Russian SFSR**Nízké Tatry* mts. v. *Czechoslovakia**Njoka* v. *Zambia**Nkalonje-Matopon* v. *Malawi*

Noble gases, terrestrial abundance, 289

Noda-Tamagawa mine, Honshu v. *Japan**Nolanite*, *Western Australia*, comp., X-ray, 55*Nomi* mts., Honshu v. *Japan**Nontronite* v. *France**Nontromite*, *Portugal*, X-ray, d.t.a., 175; *Valais*, 242*Norberg* v. *Sweden**Norbergite*, structure, 266*Nordmarkite*, *Kola*, 150*Nordmark* mines v. *Sweden**Nordstrandite*, thermal decomposition, 89; *Hungary*, in brick-clay, 176*Noril'sk*, *Siberia* v. *Russian SFSR*Norite, *Bushveld*, with inclusions of carbonatite rocks, 245; *Scotland*, with pelitic xenoliths 153—, olivine, *Aberdeenshire*, comp., 60—, quartz, *Aberdeenshire*, comp., 60*Normandy* v. *France**Norra Kärr* v. *Sweden**Norrboten* Co. v. *Sweden*

orsethite, structure, 181; *Kola*, anal., opt., X-ray, 312; *S.-W. Africa*, comp., X-ray, 312

ORTH AMERICA, age of Pleistocene deposits, 167; gemstones, 261, 262; kimberlites, 228; monazite, 97; Pb in K-feldspar, plagioclase, 50; possible diamond localities, 196; Sr in fossil teeth, bones, 116; sulphide ores, 99; trace elements in carbonatite minerals, 36; *Columbia plateau*, titanomagnetites, ferrian ilmenites, 223; *Gulf Coast*, S deposits, 262; *Gulf of California*, origin of varved sediments, 71; *Gulf of St. Lawrence*, submarine bed-rock, 80; *Superior, Lake*, Al-serpentine, 268, Hg in metamorphic rocks, 204

ORTH CAROLINA, garnets, 338; holmquistites, 48; phosphates, 23; pyrophyllitic schists, 175; *Blue Ridge mts.*, quartz, 163, mica pegmatites, 281; *Butner, Granville Co.*, diabase, 151; *Creedmoor, Granville Co.*, diabase, 151; *Foot Mineral Company's mine*, minerals, 78; *Hillsborough, Orange Co.*, chloritoid, 159; *Kings mountain*, switzerite, 314; *Ore Knob*, Cu ores, 19, sulphide ores, wall-rock alteration, 290; *Salisbury*, adamellite pluton, 159; *Staley*, minerals, 79

NORTH DAKOTA, sedimentary rocks, 69

Northern Rhodesia = Zambia

North Island v. New Zealand

North mts., Nova Scotia v. Canada

NORWAY, anorthosites, norites, 68; ilmenite ore, 189; magnetite-ilmenite ore, 59; metamorphosed sulphide ores, 330; metasediments, ores, garnets, 316; Mn, Cr, Ti, Ni in minerals of ultramafic rocks, 114; ore Pb isotopes, 113; Pb in Precambrian alkali feldspar, 50; U, Th in metamorphic rocks, 296; *Almkvaldalen, Nordfjord*, dunites, 228; *Arendal*, Pb in pegmatite feldspars, 50; *Bamble*, metamorphic rocks, 157; *Ejordam*, Fe in oligoclase, 51; *Bleikvassli mine*, Zn, Pb pyrite, 316; *Borras, Finnmark*, linnæite, 310; *Brevig*, leucophane, 267, meliphane, 267; *Fen*, O isotopes in carbonatite, 291; *Gaskasjvær, Troms*, Cu ores, 183; *Gjerstad*, fay. II-e-bearing mangerite, 316; *Grimstad*, Pb in microclines, 50; *Høffjell, Ofoten*, Pb isotopes in ores, 113, Zn-Pb ores, 98; *Herefoss*, Pb in microclines, 50; *Holum*, granite pluton, 331, *Iveland*, Pb in pegmatite feldspars, 50; *Kragerø*, Pb in feldspars, 50; *Løven, Langesundsfjord*, ramsayite, altered monazomite, 33; *Løppen*, gabbros, 146; *Møre*, Ni in pyroxene, 45; *Naustdal, Sogn og Fjordane*, barroisite in eclogite, 47; *Ofoten*, basement rocks, metasediments, 73; *Øsfold*, Pb in microclines, 50; *Oslo*, Be in sediments, 37, connate waters & contact ores, 113, metamorphism of pyrite, 57, volcanic rocks, 325; *Oslo fjord*, V, Cr, Y, Yb in garnets, 45; *Raipas, Finnmark*, linnæite, 310; *Ramnes, Tønsberg*, rheo-ignimbrite, 317; *Rogaland*, age of metamorphism, 166, plagioclases, anorthosites, 219; *Selånd island*, age of alkaline rocks, 2; *Selås*, ribbon gneiss, 331; *Sørvøy island*, age of alkaline rocks, 2; *Stjernøy*, age of alkaline rocks, 2; *Sulitjelma*, coronas in troctolite, 59, gabbro, 146; *Telemark*, Y, Yb in garnets, 45; *Troms*, basement rocks, metasediments, 73; *Tvedstrand*, Fe in oligoclase, 51; *Vegårshei-Gjerstad*, K-feldspars in gneiss, 50; *Vest-Agder*, age of metamorphism, 166; *Ytterøy*, magnetism of lamprophyre dyke, 166

Noseen, thermal expansion, 220

Novoberezovskaya, *Sibëria* v. Russian SFSR

Nowackiite, structure, 270

Nsala v. Malawi

Nsutite, *Transvaal*, comp., X-ray, d.t.a., 223

Ntonya v. Malawi

Nuanetsi v. Rhodesia

Nukundamu v. Pacific Ocean

Nullarbor plain, *Western Australia* v. Australia

Nutrition, related to geology & trace elements, 206

Nyarta-syu-yu river v. Russian SFSR

Ny Friesland v. Arctic

Nyiragongo, *Kivu* v. Congo

Oasa v. Romania

Oaş-Gutii mts. v. Romania

Oberdorf v. Austria

Ob-Irtys interfluve, *Siberia* v. Russian SFSR

Obsidian, diffractograms of powder, 84; hydrothermal treatment, 229; *Aeolian islands*, 325; *California*, identification of source, 42; *Kagoshima*, leaching of Na₂O, 110; *Mexico*, peanut, 253; *New Guinea*, lava, 64

—, rhyolite-, activation analysis, 198

Ocean, extraction of K in illite, 90

— basins, transitional types of crust, 253

Ocna de Fier v. Romania

Odikhincha, *Siberia* v. Russian SFSR

Oelsnitz v. Germany

Oeyama mine, *Honshu* v. Japan

Ofanto river v. Italy

Offretite, structure, 95

Ofoten v. Norway

Oghy, *West Pakistan* v. Pakistan

Ogishi, *Hokkaido* v. Japan

Oguchi, *Honshu* v. Japan

OHIO, *Dayton, Montgomery Co.*, brianite, panethite in meteorite, 227

Ohori mine, *Honshu* v. Japan

Oil, associated clay minerals, 176; hydrodynamic exploration of reservoirs, 189; influence of environment on source rocks, 164; paraffins in, 119; *Dagestan*, comp. of stratal waters, 205; *Germany*, maturity features, correlation features, 205; *Oilerton*, 147; *Romaschkin*, S, trace elements in, 206; *USSR*, B in, 41; *Vienna basin*, trace metals in, 296

Oil-field, Ar in ground-waters, 205

Oil shale, *Colorado*, with dawsonite, 58

Öje v. Sweden

Oka, *Quebec* v. Canada

Okayama mine, *Honshu* v. Japan

Okinawa Jima v. Japan

OKLAHOMA, age of basement rocks, 1; altered limestone near ores, 21; carbonate rocks, 202; *Craig Co.*, andesite tuff, dacite, 65; *Quanah*, *Wichita mts.*, rim albite in granite, 65; *Scott mt.*, granite, 65; *Wichita mts.*, age of granite, 1

Oktjabr'skiy v. Ukrainian SSR

Olav V Land v. Arctic

Olduvai gorge v. Tanzania

Oligoclase, IR of mixture, 336; paramagnetic resonance of Fe, 15; *Norway*, with lamellar inclusions, 51

Olivine, anisotropy in upper mantle, 160; comp. of nodules, 228; crystallization in basic rocks, 323; formed from chlorite, 288; in chondrites, 213, 299; inclusions in diamond, 334; in garnet peridotite, anal., 30; Mössbauer effect, 177; phase relations, 110; preferential leaching, 201; reaction relations with liquid, 60; reaction with monticellite, 230; transition to

spinel, 194; stability, 286; stability in metamorphic rocks, 110; structure formulae calculations, 84; thermal diffusivity, 250; *Atlantic*, in mylonite, 67; *Corsica*, altered to montmorillonite, X-ray, 48; *Etna*, in lava, comp., 61, 318; *Iceland*, comp., 311; *Italy*, in pegmatite, anal., opt., 215; *Japan*, in symplectite, comp., 322; *Lower Tunguska*, from trap rocks, comp., 233; *Minas Gerais*, in peridotite, 236; *Noril'sk*, Ni in, 114; *Quebec*, comp., opt., 46; *Siberia*, anal., opt., 215; *Silesia*, in basalt, anal., opt., 63

—, Ca, Fe, synthesis, opt., X-ray, 286

— v. also fayalite, forsterite

Olivinefels, *Bushveld*, xenoliths, 245

Olivine group, synthesis, X-ray, 286

Olivine-magnetite rocks, *Ukraine*, 187

Olivinite, *Kovdor*, pyroxene, used for building, 8; *Siberia*, anal., 215, with nodular chromite, 237

Oilerton, *Nottinghamshire* v. England

Olympus mt. v. Washington

Olyutor, Soviet Far East v. Russian SFSR

Omphacite, from eclogite, anal., opt., 30; jadeite component, 330; *Norway*, in eclogite, opt., 47

Onigajō, *Honshu* v. Japan

Ontario v. Canada

Ooids, 327

Oolite, *Valais*, Fe-bearing, comp., 242

Ooliths, *Auvergne*, volcanic, 328; *Gabon*, from sea-bed, anal., 102; *Illinois*, autochthonous & allochthonous, 240; *Normandy*, in Fe ores, 19, 102

Oolitic texture, *South Africa*, in pyrite, 70

Ooze, *Pacific*, spectrography, 202

Opal (tabashir), *Burma*, 196

Open-hearth furnaces, 8

Ophiolite, *Carpathians*, comp., 319; *Zermatt*, comp., 231

Ophiolitic rocks, in Dinaric geosyncline, 319; *Apennines*, 61, 62; *Azerbaijan*, chromite-bearing, 275; *Hungary*, 319; *Prato*, comp., 61

Ophite, *Ariège*, 231

Ophiuroids, C, O isotopes in, 116

Optical orientation of plagioclase, book, 172

Optics, age-determination by comparative birefringence dispersion method, 83, 167; optic angle determined on spindle stage, 258; orientation in crystal aggregates, 3; orientation of uniaxial minerals by interference figures, 83; pleochroism of alkali amphiboles, 305; reflectivity of ore minerals, 258; refractometer, 309; v. also refractive indices

Orange Free State v. South Africa

Oranjeriumund, *South-West Africa* v. South Africa

Oravita v. Romania

Ordanchite, *Cantal*, 318

Order-disorder kinetics, in quasi-binary crystals, 283

Orebodies, zoning of trace elements, 112; *Broken Hill*, structure, 67

Ore-deposits, 17, 96, 182, 271; associated with granitoids, 326; autoradiography, 260; complexes in granitoid rocks, 96; dendritic-skeletal crystals, 334; flow of mineralizing solutions, 97; genetic classification, 17; hydrothermal, book, 88; mineralization sources, 198; natural gases, 298; origin of Sudbury-type, 275; preconcentration by sedimentary processes, 17; saturation diagrams, 275; S isotopes in, 33; symposium on ore-forming fluids, 97; *Alaska*, 183; *Algeria*, 18; *Altai*, regional zoning, 183; *British Isles* & *Scandinavia*, Pb isotopes in, 113; *Dnieper*,

Ore-deposits, (contd.)

near granite-serpentinite contacts, 97; *Egypt*, 183; *Erzgebirge*, contact metasomatic, 329; *Falun*, associated with leptites, 146; *Germany*, S isotopes in, 33; *Jihlava*, regular distribution of ore-veins, 271; *Kaczawskie mts.*, genesis, 17; *Nevada*, related to contact metasomatism, 277; *Peru*, 17; *Poiana Ruscă*, 183; *Rhodesia*, 183; *Romania*, geosynclinal, 97; *Siberia*, geobotany, 42; *Tien-Shan*, influence of faulting on pattern, 275; *Ukraine*, thermodynamics, 187; *Utah*, 272; *Yakutia*, 183

OREGON, alpine ultramafic rocks, 228; Au in marine sediments, 84; Pb isotopes in igneous rocks, 34; Sr in sedimentary rocks, 238; *Alkali valley*, magadiite, 129; *Goble*, *Columbia Co.*, cavansite, 130; *Owyhee dam*, *Malheur Co.*, cavansite, 130; *Steens mts.*, age of basalt, 168; *Wallowa mts.*, tonalites, 236

Oregonite, synthesis, 285

Ore Knob v. North Carolina

Ore metals, transport in hydrothermal solutions, 198

Ore minerals, chemical-mechanical polishing, 3; classification by reflectance, 251; electron probe analysis of inclusions, 5; quantitative examination of polished sections, 258; reflectivity, colour coefficients, 258; rotation properties, 145

Orenburg v. Russian SFSR

Organic geochemistry, 32; of Precambrian, 87

Organic matter, acids in Green River formation, 295; acids in oxidized coal, 295; compounds transporting ore metals, 198; in meteorites, 125; *Manche*, in phthanite, 294; *Yakutia*, in waters, 40

Orientation data, statistics, 78

Orient mine, Transvaal v. South Africa

Orlando mine, Northern Territory v. Australia

Oro, Honshu v. Japan

Orogenic regions, 316; distribution of metamorphic minerals in belts, 73; *Uganda*, belts, 246

Orogeny, regression of seas, 253

Orthite v. allanite

Orthoclase, IR of mixture, 336; structure, 269; thermodynamics, 110; *Ladoga*, in rapakivi granite, 324; *Minas Gerais*, dispersion of birefringence, 166; *Norway*, in augen gneiss, 50, in granite, gneiss, 331; *Vosges*, comp., X-ray, 50; *Zambia*, stability in carbonatite, 30

— rock, *Malawi*, comp., 234

Orthogneiss, *Cascades*, 65; *Galicia*, blasto-mylonitic, 247

Orthopyroxene, Al_2O_3 content, 134; aqueous solubility, 109; crystal-field phenomena, 177; Mg, Fe distribution, 267; Mg-Fe order-disorder, 267; Mössbauer effect, 177, 266; optics & comp., 134; stability relations, 29; *Aberdeen*, from norite, anal., 60; *Guyana*, in granulite, gneiss, 159; *Nevada*, coexisting with microcline, 65

Ortho-serpentine, X-ray, 49

Orthosilicic acid, dissociation constant, 190

Osarizawa mine, Honshu v. Japan

Osetia v. Russian SFSR

Øsfold v. Norway

Oslo v. Norway

Oslo fjord v. Norway

Osmankuyu-Kisir v. Turkey

Osmiridium, X-ray, 186

Osmium, determination, 123; in deep-sea sediments, 293; in meteorites, 123, 126, 212; *Yakutia*, in ultrabasic & alkaline rocks, 112

Ossola valley v. Italy

Ostra v. Romania

Ottemannite, 126

Oued el Kébir v. Algeria

Outer Hebrides, *Inverness-shire v. Scotland*

Owyhee dam v. Oregon

Owyheeite, *Transbaikal*, X-ray, 310

Oxidation-reduction potentials, 290

Oxide-apatite rocks, origin, 284

Oxide minerals, book, 6; *Japan*, in metamorphic rocks, 141

Oxides, acid & basic properties, 112; bulk modulus, 75; in molten slags, 8; stabilities, 24

Oxide systems, exsolution in, 89; high-temperature solution calorimetry, 29; thermodynamics, 24

Oxygen, determination, 86; fugacity during metamorphism, 155; fugacity in volcanic rocks, 223

— isotopes, equilibrium during prograde metamorphism, 296; in calcium sulphate, 39; in exchanged feldspars, 110; in marine invertebrates, 116; in minerals, rocks, 87; in sea-water, sulphates, 117; *California*, in dolomite, calcite, 241; *Caucasus*, in limestones, 202; *Causses & Montagne Noire*, in limestone, dolomite, 203; *Norway*, in carbonates from carbonatite, 291; *Paris*, in gypsum, carbonates, 176; *Red Sea*, in foraminifera, 294

Oxyhornblende, 110; *Nagano*, X-ray, 94

Oyuklu v. Turkey

Ozieri, Sardinia v. Italy

Pacheco pass v. California

PACIFIC OCEAN, age of basalt, 168; alkali basalts, 320; crust, upper mantle, 261; genesis of volcanic rocks, 325; Ir, Os in deep sea sediments, 293; magnetism of cores, 339; metamorphism in mobile belts, 246; oceanic sedimentation rate, 241; radioactive fallout particles, 241; trace elements in deep-sea cores, 202; trace elements in Mn nodules, 117; trace elements in volcanic rocks, 35; U isotopes in sea-water, 118; *Aleutian basin*, crustal section, 253; *Bonin islands*, Sr in volcanic rocks, 292; *East Pacific rise*, abyssal hills, magnetic anomalies, 339; *Fiji*, trace elements in volcanic rocks, 35; *Marianas islands*, Sr isotopes in volcanic rocks, 292; *Marquesas*, trace elements in volcanic rocks, 35; *Moorea*, coral islands, 241; *New Caledonia*, eclogites, 159; *Nukudam*, *Fiji*, sulphide ore minerals, 274; *Polynesia*, age of volcanic rocks, 255; *Saipan*, Sr in volcanic rocks, 292; *Society ridge*, authigenic cementation of sediments, 244; *Solomon Islands*, age of basal schists, 2; *Tahiti*, age of volcanic rocks, 255, trace elements in volcanic rocks, 35

—, *HAWAII*, Pb isotopes in volcanic rocks, 255; sodic basalts, 239; trace elements in volcanic rocks, 35; *Kilauea*, plagioclase, 151, volcanic eruption, 327; *Makaoa*, lava lake, 228, 327

Paint Pot hill v. Wyoming

PAKISTAN, WEST PAKISTAN, *Hazara*, Pb ore, 103; *Mansehra*, *Amb*, granitic complex, 150; *Oghy*, *Hazara*, W, Mo minerals, 101; *Swat*, vermiculite, 90

Pala v. California

Palačov v. Czechoslovakia

Palaeocurrent analysis, *Sweden*, of Precambrian, 155

Palaeogeography, as indicated by pebbles, 153

Palaeolithic beds, *Dniester*, age, 82

Palaeomagnetism v. magnetism

Palaeopodzol, Paris basin, 13

Palaeotemperature, *Caribbean*, of deep-sea core, 164; *Russia*, of Cretaceous, 206

Palaeozoic carbonate microfacies, *United States*, book, 88

Palagonite, *Lower Tunguska*, in trap rocks V, Cr, Co, Ni, Cu in, 234; *Pacific*, alteration products, 244

Palatinitite, *Germany*, 228

Palermo mine v. New Hampshire

Palladium, in chondrites, 126; *Yakutia*, in ultrabasic & alkaline rocks, 112

— minerals: *Monchegorsk*, bismuthide, 226; *Siberia*, in Cu-Ni ores, 226

Pallavaram v. India

Palmer, South Australia v. Australia

Palygorskite (attapulgite), cooling coefficient 263; identification, 10; synthesis, 111

Banat, X-ray, 245; *Gulf of Aden*, 91; *Kyoto*, 91; *Paris basin*, 264; *South Carolina*, 12; *Switzerland*, in molasse, 264

Vauclusie, in Miocene, 174

— clay, *India*, X-ray, d.t.a., 11

Pamirite, *Kugit-Lyal mines*, = forsterite, anal., opt., 44

Pamirs v. Tadzhik SSR

Panethite, in meteorite, anal., opt., X-ray 227

Panków v. Poland

Papua, New Guinea v. East Indies

Paracelsian, structure, 93

Paracharnockite, *Kola*, 158

Paraffins, formation, 87; formed by geochemical processes, 38; in marine sediments, 37; in oil, 119; *Persian Gulf*, in sediments, 203; *Swabia*, in shale, 189

Paragenesis of minerals, 39

Paragneiss, *Alto Adige*, 248; *Galicia*, polymetamorphic, 247; *Ontario*, Au, Ag, Cu in, 18

Paragonite, *Côtes-du-Nord*, in schist, X-ray 331

— margarite, *Kyoto*, X-ray, 136

Parahopeite, structure, 95

Paresis, South-West Africa v. South Africa

Pargasite, *Australia*, from hornfels, comp. 217; *Yakutia*, comp., opt., 305

Parikkala v. Finland

Paris basin v. France

Parisite, IR absorption, 16

Parma Apennines v. Italy

Parry Sound, Ontario v. Canada

Parupietersburg, Natal v. South Africa

Pauzhetka, Soviet Far East v. Russian SFSR

Pavão v. Brazil

Payas v. Turkey

Payas de Léon v. France

Pay-Yer mt. v. Russian SFSR

PCC-1, comp., 32; Cu, Ga, Zn in, 86; V in, 87

Peabody mine v. Illinois

Pea ridge v. Missouri

Pearl, 196

Peat, definition, 70; diatomaceous, comp., 18

Peat-bogs, *Sweden*, age of volcanic ash horizons, 83

Pebbles, as guide to palaeogeography, 153

Pechenga v. Russian SFSR

Pechenga-Lotta interfluve v. Russian SFSR

Pechora Urals v. Russian SFSR

Pectolite, structure, 268; *New South Wales*, comp., 64

Peigmatite, Be in, 199; cordierite-quartz intergrowths, 238; element concentration & ionization potentials, 289; morphology of zircons, 45; Ta, Nb in muscovite, 33

Alnö, sövite, inclusion in alnöite, 146

Argentina, with Li minerals, 50; *Baikal*, alkali metals, Be in minerals, 50; *Baveno*, with beryl, 304; *Bet-Pak-Dala*, formation temp., 315; *Brazil*, age, 3; *Bulgaria*, rare

Igmatite, (contd.)
metal mineralization, 273; *Colorado*, micas n, 136; *Congo*, beryl-bearing, 322; *Ghana*, Li, Bi-bearing, comp., 289; *Gotthard*, tourmaline-sillimanite, 185; *Hebrides*, metamorphosed & deformed, 246; *India*, Li-bearing, 136; *Karelia*, comp., origin, 199; *Kazakhstan*, Sc, in 53; *Krasnaya hory*, with molybdenite-feldspar ore, 19; *Magdeburg*, origin, 152; *Moravia*, with chrysoberyl, 63; *Mozambique*, comp. of feldspars, 220; *New Jersey*, U, rare-earths in, 18; *North Carolina*, as source of mica, 281; *Portugal*, mineralogy, 252; *Rhodesia*, Sn-bearing, 276; *Rhodopes*, accessory minerals, 144; *South Africa*, in schist, 253; *S.W. Africa*, with altered beryl, 304; *Transvaal*, fennitized, 238
gmatoid rocks, *Ariège*, with orthoclase, 231; *Cantal*, 317
litic rocks, electro-osmotic core cutting, 170; *Congo*, mineralogy, 329; *Seville*, metamorphic zones, 217
mudletonite, *California*, comp., opt., X-ray, 131
mnantite, *Kazakhstan*, anal., opt., X-ray, 307
nnine, *Elba*, intergrown with phlogopite, 49
nnine coalfield v. *England*
nnsylvania, age of kimberlites, 256; age of shales, 81; anthracite, 282; deformed serpentinite, 228; zoned & platy magnetite, 113; *Appalachians*, fossil & rock deformation, 72; *Dixonville*, C, O isotopes in carbonates, 292
ntlandite, exsolution in Fe, Ni ores, 285; fusion, crystallization, X-ray, 106; in meteorite, 123; *Kamchatka*, 275; *Rhodesia*, reflectivity, 186
rcyclite, *Massachusetts*, 163
rcilase, Compton scattering, 76; equation of state, 283; recrystallization, 8; thermal diffusivity, 250; *California*, in metamorphosed limestone, 142
eridotite, inclusions in basaltic rocks, 228; In in, 260; intrusions, 228; melting & phase relations, 287; *Bohemian massif*, elements in mineral phases, 62, with corroded garnet, 62, with pyrope, 62; *Caucasus*, Sc in, 200; *Ceský Les mts.*, 62; *Malawi*, comp., 235; *Tien-Shan*, B in, 309; *Turkey*, 322; *United States*, age, 256; garnet, mineralogy, 30; *Switzerland*, 318
-hornblende, *Janowice Wielkie*, 63
-mica, intrusion temperature of dyke, 59; *Utah*, comp., 330
-pyrope, *Ceské Středohory*, 62; *Minusinsk*, inclusions in pipes, 62
-mylonite, *Atlantic*, with porphyroblast, 67
eriodic system, & geochemical dispersion of elements, 206
rmeability, of rock mass, 161
reroskite, niobian, 127; stability, 105; *Quebec*, comp., opt., 46; niobian, comp., opt., 46
erovskite oxides, interband Faraday rotation, 14
Perran bay, *Cornwall* v. *England*
Perrierite, structure, 177, 178; synthesis, analogues, X-ray, 108; *Finland*, 162
-Sc, *Kazakhstan*, anal., X-ray, 53
Perryite, in meteorites, 300
Persani mts. v. *Romania*
Persian Gulf v. *Asia*
Pertite, microcline, separation by fractionation, 258; *Mozambique*, X-ray, 220; v. also cryptoperthite
Perthosite, *Malawi*, comp., 235
-hornblende, *Malawi*, comp., 235

PERU, *Andes*, geology, ore-deposits, 17
Petalite, thermal properties, 281
Petersberg v. *Germany*
Petrofabrics, computer programme for fabric diagrams, 3; olivine, orthopyroxene in ultrabasic massif, 67; quartz in plutons, 229; standardization of diagrams, 324; *Gotthard*, of massif, 237
Petrogenetic theory, review, 68
Petrography, classification, 316; spectrographic analyses, 5; variation diagrams, 87
Petrolite, 58, 145, 227, 314; books, 172, 88
Petrova v. *Ukrainian SSR*
Petzite, *Philippines*, 278
Peyrebrune v. *France*
Pharmacosiderite, *Cornwall*, structure, 271
Phase diagrams, compound formation in binary system, 191; location of field boundaries, 283; of ternary molten salt systems, 283
Phase equilibria, levitation melting apparatus, 24
Phenakite, formed from beryl, 134
Phengite, Al ions in, comp., X-ray, 136
Philippines v. *East Indies*
Phillipsburg v. *Montana*
Phillipsite, authigenic in deep-sea sediments, 244; *Hungary* & *Italy*, thermal decomposition, 221; *Niigata*, in altered basalt, comp., X-ray, IR, 221
Phlogopite, experimental alteration, 111; heterogeneity, 33; hydration states, 11; in carbonatite, kimberlite, 30; K isotopes in, 33; stability, 110; transformed to vermiculite, 263, 289; *Aldan*, age, 256; *Banat*, X-ray, d.t.a., 245; *Corsica*, from minette, anal., opt., 48; *Elba*, intergrown with pennine, 49; *Kola*, anal., opt., absorption spectra, 136; *Moravia*, ferroan, comp., opt., X-ray, d.t.a., 11, 137; *Ottawa*, age, 66; *Quebec*, comp., opt., 46, in marble, 334; *Siberia*, anal., opt., 215; *Western Australia*, age, 1
—olivine rocks, *Maymeca-Kotuy*, 234
Phonolite, *Antarctica*, 66; *Malawi*, comp., 234
Phonolitic rocks, *Monteferro*, 62
Phosgenite, *Massachusetts*, 163
Phosphate deposits, *North Carolina*, 23; *Syria* & *Egypt*, 188
Phosphate minerals, 102; precipitation in sea-water, 294; *Silesia*, in joints in basalts, 78
Phosphate rock, radioactivity, 23; *New South Wales*, bands & nodules, 155
Phosphates, rare-earth, structure, 182
Phosphides, book, 6
Phosphophyllite, structure, 95
Phosphorite, origin, 281, 294; *Florida*, 155; *Mexico*, 244; *Siberia*, comp., 281; *United States*, on coastal plain, 23
Phosphorus, determination, 86, 172; in meteorites, 43, 212; in plagioclase, 52; isotopes in hydroxyapatite, 284; *Africa*, in basalts, 148; *Baltic Sea*, in concretions, 117; *Marlsburg*, in granite pluton, 114
Phosphosiderite, *Hainault*, 224; *Portugal*, X-ray, d.t.a., 252
Photodensitometer, 89
Photoelastic techniques, 84
Photogeology, *Uganda*, of orogenic belts, 246
Photogrammetric projection, *Switzerland*, of granite, 324
Photography, of polished rock surfaces, 169
Photoluminescence, *Urals*, of sphalerite, 336
Phthianite, *Manche*, organic extracts in, 294
Phyllite, *Aar*, 247; *Hungary*, comp., 333; *Romania*, graphitic, 248; *Styria*, 247; *Wallis*, 332

Physical properties of rocks & minerals, 75, 160, 249, 333
Piccance creek v. *Colorado*
Picotite, *Atlantic*, in mylonite, 67; *Virginia*, 79
Picrite, *New South Wales*, differentiation, comp., 64
Picritic rocks, *Skye* & *Scalpay*, comp., 61
Picropengrite, *China*, comp., opt., X-ray, 306
Piémontite v. *Italy*
Pilanesberg, *Transvaal* v. *South Africa*
Pilis mts. v. *Hungary*
Pillow-lavas, *Apennines*, comp., 62; *Graubünden*, 231; *Spain*, two types, 237; *Turkey*, 322
Pilotaxitic texture, 316
Pilot Knob v. *Missouri*
Pinon peak v. *Colorado*
Pinto v. *Spain*
Pisek v. *Czechoslovakia*
Pitchblende, rare-earth elements in, 198; *Aar*, in gneiss, 185; *Wallis*, in schists, 185
Pitchstone, *Iceland*, liquidus temperature, 311
Piton des Neiges v. *Indian Ocean*
Pittsylvania Co. v. *Virginia*
Plagioclase, age from dispersion of birefringence, 83; An, Or content, X-ray, 51; coexisting with K-feldspar, Pb in, 50; crystallization in basic rocks, 323; determination of An content, 3; dispersion of birefringence, 167; distribution of Si, Al, 15; Eu in, 292; heterogeneity, 33; lattice constants & related parameters, 52; minor elements in, 52; optical orientation, book, 172; pericline & albite twinning, 51; reciprocal lattice angles, 51; revised dispersion method, 219; Sr, Ca in, 292; synthesis, 29; thermoluminescence, 76; X-ray determination, 52; *Allier*, epitaxial with microcline, 138; *Andhra Pradesh*, zoned in charnockite, comp., X-ray, 219; *Austria*, gases in, 260; *Bushveld*, comp. & structure, 269; *California*, weathered to allophane, 51; *Connecticut*, in amphibolite, opt., 75; *Etna*, in lava, comp., 61, 318; *Hawaii*, phenocrysts in lava, anal., opt., 151; *Hocheifel*, in trachyte, 217; *Hokkaido*, altered in propylites, 138; *Iceland*, in andesitic rocks, opt., 61; *Idaho*, associated with scapolite, opt., 52; *Indonesia*, zoned, 322; *Japan*, in symplectite, comp., 322; *Kyushu*, coexisting types in schists, X-ray, 138; *Lepontine Alps*, An in, 51; *Lower Tunguska*, from trap rocks, comp., 233; *Nigeria*, phenocrysts in basalts, 321; *Norway*, in anorthosite, Sr, Ba, Ca, K in, 219; *Praia*, in ophiolitic rocks, 62; *Transkei*, in dyke, 235; v. also varieties
Plagiogranite, *Manastir hills*, biotite in, 48
Plagioclase, rotation properties, 145
Planaria v. *Italy*
Plancheite, *Arizona*, 79; *Congo*, comp., opt., X-ray, 53; *Elba*, anal., opt., X-ray, 54; *Katanga*, X-ray, 221
Planche-les-Mines v. *France*
Plan de la Tour v. *France*
Planets, thermal radiation, 254
Plankton, amino acids in, 38; C isotopes in, 297; radioactive elements in, 118; *Bahamas*, Ra in, 41
Plants, accumulation of silica, 206; I in, 206
Plaster of Paris, ageing, 89
Plasticity, effect of pressure, 250

Platinoid grains, in Witwatersrand conglomerate, 186

Platinum, in chondrites, 126; in meteorites, tektites, sediments, 43; *Yakutia*, in ultra-basic & alkaline rocks, 112

Plazolite, *Honshu*, 139

Pleistocene, age-determination, 3, 167, 339; chronology, 339

Pliocene-Pleistocene boundary, 29, 339; *New Zealand*, 2

Plumbogummite, *Cumberland*, = mixture, 58

Plumbopyroxolite, *Ural*, anal., opt., X-ray, 226

Pluton, contact zone, 332; *Maine*, mafic, 151; *Monchegorsk*, origin, 152

Plutonic rocks, criteria, 316; *Kamchatka*, associations, 320

Plutonium, in meteorites, 208; in solar system, 207

Poarta Alba v. Romania

Poços de Caldas v. Brazil

Poiana Ruscă v. Romania

Poitevinit, *British Columbia*, anal., opt., X-ray, 131

Poitou v. France

Pokrovo-Kireev v. Ukrainian SSR

POLAND, Fe, Mn in underground waters, 41; Triassic rocks, clay minerals, 92; *Bialskie mts.*, *Sudeces*, muscovite, garnet in quartzite, 49; *Bielice*, *Sudeces*, granitoids, schists, ultramafic rocks, 63; *Bochnia mine*, tuffites, halite, 63; *Bolecin*, *Chrzanów*, dolomitic rocks, 71; *Brzozowice*, *Lower Silesia*, serpentinite rocks, 103; *Carpathians*, clay shales, 117, crystalline basement complex, 332, regional metamorphisms, 332; *Cracow*, dolomitic rocks, 154; trace elements in Zn, Pb ores, 290; *Czerniawa Zdroj*, *Sudeces*, tourmaline-bearing rocks, 72; *Grochowa*, *Lower Silesia*, serpentinite rocks, 103; *Janowice Wielkie*, hornblende peridotite, 63; *Kaczawskie mts.*, Fe, Pb, Zn, Cu ores, 17; *Kamiensk*, *Walbrzych*, dickite, 11; *Karkonosze*, *Sudeces*, granite, 237; *Karpacz*, *Sudeces*, gneisses, 72; *Kopaniec*, *Izera mts.*, gneiss-schist in leucogranite, 232; *Lazany*, *Zarow*, granitoids, country rocks, 63; *Legnickie Pole*, Au sands, 18; *Lubin*, clays, 243, Fe, Mn in underground waters, 41; *Mikolajki lake*, sediments, 154; *Parków Świdnicki*, sandstone-clay, 71; *Silesia*, dolomitic rocks, 154, trace elements in Zn, Pb ores, 290; *Sobótka*, basic & ultra-basic rocks, minerals, 320; *Świetla Anna mts.*, *Silesia*, basalt, 63; *Tatra mts.*, *Carpathians*, age of gneisses, 83, origin of graphitoid schists, 39; *Truskavka*, tuffaceous rock, 243; *Trzebionka mine*, *Silesia*, Pb-Zn ores, 184; *Vistula river*, Fe, Mn in underground waters, 41; *Wadzro Wielkie*, Au sands, 18; *Walbrzych*, coked coals, 329; *Zareba Góra*, *Luban*, phosphate in basalts, 78

Polishing, chemical-mechanical of ores, 3

Pollen, *Hungary*, 80

Pollucite, solid solution with analcite, 95; *New England*, opt., thermogravimetry, X-ray, 95

Polousnyi ridge, *Siberia v. Russian SFSR*

Polybasite, *Mexico*, selenian, X-ray, 140

—pearceite series, 140

Polyhalite, twinning, structure, 95

Polymetallic ores, *Apuseni mts.*, 98; *Příbram*, 184

Polymorphism, entropy-volume relationship, 32

Polynesia v. Pacific Ocean

Porcelain ware, 9

Porcellanite, *Negev*, 244

Porphyrite, *Carpathians*, 319; *Siberia*, altered, K-feldspars in, 50; *Tien-Shan*, B in, 39; *Vosges*, ankeritic, anal., 147

—keratophyre, *Bosnia*, altered, 158, 232

Porphyritic texture, 316

Porphyroblasts, garnet with inclusion trails, 67

Porphyroblast minerals, *Atlantic*, in mylonite, 67

Porphyroid, *Spain*, 332

Porphyry, *Black Forest*, 319, secondary minerals in, 330; *Dalarna*, ignimbrite, 146; *Kii peninsula*, with feldspar phenocrysts, 151; *S.-W. Africa*, 235; *Stanovoy range*, dykes, comp., 149; *United States*, Sr isotopes in, 113; *Zambia*, comp., 63

Portalet pass v. *Spain*

Portel v. *France*

Portlandite, *Israel*, 245

Potassium, abundance in Earth, 197; determination, 5, 42, 85, 86, 172, 198, 260; diffusion from clay minerals, 10; in andesites, 239; in Earth's crust, 290; in eclogite, 295; in igneous & related rocks, 292; in mantle-derived rocks, 228; in plagioclase, 52; isotopes at granite-shale contact, 117; isotopes in mica, microcline, sylvine, 33: natural variations in isotopes, 34; removed from ocean in illite, 90; *Aar*, in granite, 293; *Africa*, in basalts, 148, in lavas, schists, 325; *Altai-Sayan*, in acid igneous rocks, 114; *Arizona*, in altered Cu ores, 98; *Caucasus*, in carbonate rocks, 202; *Georgian SSR*, in granitoid rocks, 199; *Kazakhstan*, in granite contact zones, 7; *Marlsburg*, in granite pluton, 114; *Mozambique*, in feldspars, 220; *New Hampshire*, lost from weathered silicates, 174; *Norway*, in plagioclase, 219; *Quebec*, in shield rocks, 115; *South Africa*, near granite-amphibole contact, 115; *Soviet Central Asia*, in sands, 293; *Tuscany*, in acid rocks, 34

Potassium-allevardite, *Kuli-Kolon*, anal., opt., X-ray, d.t.a., 179

Potassium-clinoptilolite, *Yamagata*, anal., 130

Potassium compounds: formation of colloids in KCl, 104; growth of KCl in presence of Pb ions, 282; structure of K-graphite, 96; synthesis, structure of $K_2Me_2(BeF_4)_3$, 17; water vapour adsorption on chloride, bromide, 118

Potassium deposits, Rb, Tl, Br in, 294; *Alsace*, 280; *Kansas*, 262; *Stassfurt*, 23, with halite cover, 328; *Werra*, CO_2 in, 339

Potassium minerals: red colour of potash salts, 164; *France*, in Trias, 280; *Upper Kama*, chloride content of sylvinites, 23

PORTUGAL, granite plutons, 324; U minerals in metasediments, 101; *Baixo Alentejo*, quartz in baryte, 220; *Lagoa Comprida*, *Serra da Estréla*, granitic breccia, 152; *Mangualde*, nontronite, 175; *Moura-Barrancos*, greywackes, schists, 148; *Muge river*, *Lisbon*, age of Mesolithic middens, 82; *Niza*, *Alentejo*, contact metamorphism, 156, U minerals, 101; *Senhora das Fontes*, U minerals, 101; *Tagus river*, Cu, U in sediments, 36; *Valejas*, *Carnaxide*, andesite, zeolites, 148; *Vermilhas*, pegmatite minerals, 252

Postmasburg, *Cape Province v. South Africa*

Powder basin v. Wyoming

Powderhorn v. Colorado

Powellite, hypogene formation, 26

Prat-de-Bouc v. France

Prebalkhash v. Kazakh SSR

Precambrian geochronology, *India*, 82

Precambrian rocks, magmatic evolution in relation to time, 87; organic geochemistry, 87; *Algeria*, 248; *Colorado*, 75; *Graben basin*, 74; *Red Sea*, 7; *Transvaal*, aliphatic hydrocarbons in, 38

Precious stones v. gemstones; semi-precious stones

Prehnite, stability field, 195; *Harzburg*, structure, 14; *Kureyka river*, X-ray, d.t.a., 133; *Lower Silesia*, in alteration zone, 320; *Nagano*, anal., opt., d.t.a., 308; *South Wales*, comp., 64

Prekaolinite, 264

Premier mine, *Transvaal v. South Africa*

Preobrazhenskite, opt., 56

Pressure gradient, diffusive effect, 197

Příbram v. Czechoslovakia

Priderite, *Corsica*, in minette, 223

Primorskoye, *Soviet Far East v. Russia SFSR*

Prince Edward island v. *Indian Ocean*

Principal component analysis, 48, 79

Prinzenz v. Italy

Přísečnice v. Czechoslovakia

Proberty, *Donets basin*, 56

Propylite, *Hokkaido*, with altered plagioclase, 138

Prospect, *New South Wales v. Australia*

Prospecting, offshore, for Sn, 187; on sea bed, 170

Protodolomite, synthesis, X-ray, 192

Provence v. France

Probolitic, *India*, comp., 236; *Siberia*, comp., 283; *Synnýr*, mineral association, comp., 234

Pseudomalachite, *Saarland*, 77

Psilomelane, *Philippines*, 279

Puerto Cabello v. Venezuela

Puffer Butte v. Washington

Pugwash, *Nova Scotia v. Canada*

Pumice, sorting of fragments, 153; *France*, nappes, 317; *New Zealand*, 327, Se in, 31

Puy-de-Dôme, 317; *Rajasthan*, fusion flowage, 324

Pumpellyite, Fe in & opt., 304; stability, 288; structure, 177; *Lower Silesia*, alteration zone, 320; *Noril'sk*, Fe-rich anal., opt., X-ray, d.t.a., 304

Punteglias v. Switzerland

Puy-de-Dôme v. France

Pyralspite, *Kyoto*, anal., opt., X-ray, 13

Shikoku, zoned, anal., 132

Pyrenees v. France

Pyrite, chemical-mechanical polishing, crystal morphology, 334; developed from gel, 20; dissociation equilibrium, 28

Flotability & thermoelectric potential, 103; microhardness, 75; miscibility with galena, 285; phase relations, 106; stability, 94; synthesis, 285; thermal expansion, 336; weathered to Pb-Bi sulphosalts, 2

Africa, cobaltiferous, X-ray, 22

Australia, in coal, 71; *Caucasus*, with redeposited chalcopyrite, 113; *Friesian islands*, biosynthesis, 107; *Illinois*, fossil clams, 78; *Japan*, biogenic, 29

trace elements & cell edge, 140; *Kazakhstan*, In, Tl, in 200; *Kerala*, formed from altered mica, 57; *Krivoy Rog*, Se in, 4

Ontario, syngenetic in Fe ore, 27

Oslo, contact-altered, 57; *Portugal*, X-ray, 252; *Pyrenees*, formation temperature, 330; *Rhodesia*, reflectivity, 186; *Silesia*, trace elements in, 291; *South Africa*, gold-bearing reefs, 186, oolitic structure, 70; *Styria*, in magnesite & talc, 5

Tochigi, Se, Cu, Fe, Zn, Cd in, 113; *Ural*, globular, 20; *Yorkshire*, diagenetic, 15

Zambia, Co in, 187

—ore, related to volcanism, 17, 18

cite ore, (contd.)

Pyrrhotite, 274; *Kunashir island*, in volcanic rocks, 99; *New Mexico*, 272; *Okayama*, 97; *Pyrenees*, 274; *Romania*, 97; *Urals*, anhydrite, gypsum in, 291; Pb isotopes in galena, 22; volcanic origin, 99

Roaurite, structure, 95

Rochlore, in granite, 150; *Kivu*, anal., 312; *Malawi*, opt., 235; *Quebec*, comp., opt., 46

-microlite group, reflectivity, 55

Rocklastic rocks, origin, 6; *Caspian trough*, 321; *Virginia*, 151

Rocklastite, *Hungary*, 320; *Novara*, 332; *Vicenza*, altered, 231

Roegermanite, IR, X-ray, 94

Rolusite, morphology, 333; *Aomori*, anal., X-ray, d.t.a., 56; *Belgium*, opt., 304; *Madhya Pradesh*, X-ray, 20

Rhomorphite group, 144

Ropy, incongruent melting, 103; *Africa*, comp., 45

-almandine, Mössbauer effect, 177; *Sahara*, in pyroxenite, comp., opt., 47

Yrophanite, optical absorption, 265

Yrophyllite, cooling coefficient, 263; glow curve, 89; identification by ignition loss, 10; *Japan*, IR absorption, 90

Yrosomalite, *Hillefors*, 100

Yroxene, asterism, X-ray, 197; classification, 217; coexisting with garnet, 195; crystal-field phenomena, 177; electron spectra of Fe, 93; estimation in calc-alkaline volcanic rocks, 83; Eu in, 292; gas-liquid inclusions, 282; high-pressure transformation, 287; in chondrites, 213; in differentiated trap-rocks, Fe, Ti in, 46; in eclogites, comp., 159; in meteorites, 299, comp., 210; magnetism, comp., 252; phase relations, 110; spectra of ferrous iron, 93; stability, 286; stability in metamorphic rocks, 110; structural formulae calculation, 84; transformation to garnet in Earth's mantle, 287; *Alnö*, from carbonatites, fenites, comp., opt., 47; *Azov*, Ga in, 200; *Bushveld*, fassaitic & diopsidic, comp., 245; *Caucasus*, in skarns, comp., opt., 217; *Donegal*, dendritic in dolerite cavity, 47; *Georgian SSR*, from volcanic rocks, comp., opt., 320; *Iceland*, coexisting pairs, comp., 311; *Kondopalli*, coexisting in ultrabasic rocks, 46; *Kurusay*, from skarns, comp., 47; *Lower Tunguska*, from trap rocks, comp., 233; *Malawi*, anal., opt., 235; *Saitama*, in metamorphic rocks, opt., 133; *Siberia*, in trap-rocks, 216; *Transkei*, in dyke, 235; *Ukraine*, in charnockites, comp., opt., X-ray, 305, with lamellar intergrowths, 46; *USSR*, rare-earths in, 114; *Yakutia*, in eclogite, comp., 216

-Ni, synthesis, opt., X-ray, 109

-Zn, synthesis, X-ray, 109

-v. also orthopyroxene, clinopyroxene; varieties, species

Pyroxenofels, *Bushveld*, xenoliths, 245

Pyroxene stone, crystallization, 8

Pyroxenite, alkaline, 228; *Caucasus*, Sc in, 200; *Colorado*, 96; *Donbas*, comp., 115; *Sahara*, inclusion in basalt, 47; *Siberia*, nephelinization, 68; *USSR*, rare-earths in, 114

Pyrrohotite, Mössbauer spectra, 16; phase relations, 106; rotation properties, 145; synthesis, 285; *Germany*, trace elements in, 140; *Kamchatka*, 275; *Kochi*, comp., 140; *Kriyov Rog*, Se in, 40; *New York*, veins with apatite, 78; *Ontario*, comp., X-ray, 99; *Oslo*, formed from altered pyrite, 57; *Rhodesia*, reflectivity, 186;

Sudbury, Ni, Co in, 18; *Tessin*, 186; *Uzbekistan*, in anhydrite skarns, 99; *Wakatipu*, hexagonal & monoclinic forms, 19

-pyrite geothermometer, 99, 285

Quanah v. Oklahoma

Quarterly Journal of Engineering Geology, 13

Quartz, CO₂ in inclusions, 198; crystal morphology, 334; defects of single crystals, 104; descent of fine particles, 257; dispersion, 196; dynamic compression, 249; elastic moduli, 76; etch patterns, 193; fabric data, 250; far IR spectra, 76; force constants, 335; gas in fluid inclusions, 290; growth pyramids on rhombohedral faces, 75; growth twins, 104; Hg in, 204; high-low inversion, 193; high-pressure transformation, 302; H₂O, CO₂ in, 260; hydrothermal deposition, 28; impurities in, X-ray, 309; in pegmatite, formation temp., 315; in saliniferous deposits, 244; intergrown with cordierite, 238; intra-mineralization stoping during formation, 330; IR of mixture, 336; isomorphous replacements, X-ray, 309; isotropic sound velocities, 250; lattice dynamics, 182; neutron irradiated, 77; opt., 309; optical undulation, 251; petrofabrics in plutons, 229; plastic deformation, 335; reaction with aqueous chloride & hydroxide, 28; rhombohedral faces, 160; solution reaction, 193; space groups, band spectra, 335; thermal diffusivity, 250; thermoluminescence, 336; with inclusions, 220; *Aldan*, formation temp. of rock crystal, 309; *Alns*, liquid inclusions, 220; *Ascension island*, liquid inclusions, 34; *Azov*, Ga in, 200; *Brazil*, twin, 220; *Gifu*, smoky, trace elements in, 138; *India*, age from thermoluminescence, 2; *Isère*, lamellar, zoned, 309; *Karamazar*, In, Ti in, 200; *Kazakhstan*, Al, Ti in, 138; *Metalliferous mts.*, fluid inclusions, 275; *Portugal*, globules in baryte, 220; *Pyrenees*, formation temp., 330; *Urals*, grains in eclogite, 153; *Virginia*, 163

Quartzite, graphitic, NH₄ in, 40; *Balkash*, thermoluminescence, 336; *Elain*, 317; *Great basin*, Precambrian, 74; *Kursk*, ferruginous, geochemistry, 199; *Ontario*, comp., 244; *Spain*, feldspathic, 332; *Sudetes*, muscovite, garnet in, 49; *Sweden*, with iron-sand bed, 157; *Tanzania*, with sillimanite, kyanite, topaz, 45; *Urals*, albitized, comp., 156

Quuebe v. Canada

Queen Elizabeth islands, *Northwest Territories v. Canada*

Queen Maud Land v. Antarctica

Queensland v. Australia

Quibou v. France

Radautal v. Germany

Radioactive elements, in alkaline rocks, 36; in planktonic detritus, 118; *Quebec*, in shield rocks, 115

Radioactive fallout, *Pacific*, 241

Radioactivity, of meteorites, 123, 209; of zircon, 303; *Aar*, of granite, 293; *Fornholm*, of granitoid rocks, 161; *California*, of batholith, 230, of greywackes, 251; *Carpathians*, of crystalline rocks, 230; *Congo & Rwanda*, of pegmatites, 322; *Gulf of Lion*, of beach sands, 327; *Haut-Savoie*, of river sands, 70; *Orange Free State*, of boreholes, 186; *Soviet Central Asia*, of sands, 293

Radiocarbon dating, 2

Radiometric dating, book, 261

Radium, isotopes in river waters, sediments, 297; *Bahamas*, in plankton, sea-water, 41; *Caucasus*, in carbonate rocks, 202

Raduša mine v. Yugoslavia

Raipas v. Norway

Rajasthan v. India

Rakha mines v. India

Ralston Buttes v. Colorado

Ramnes v. Norway

Ramsayite, *Langesundsfjord*, from altered mafic, 53

Ranciéite, *Virginia*, 79

Ransko v. Czechoslovakia

Rapakivi texture, *Lavaria*, in granite, 323; *Dartmoor*, in granite, 67; *Flamanville*, in granodiorite, 308; *Ladoga*, 323

Rare-earth elements, determination, 5, 259, 260; distribution, 87; distribution between coexisting minerals, 197; geochemistry, 111; in anorthosite, mangerite, 35; in carbonatite, 201; in fluorites, 56; in sedimentary cycle, 201; in tektites, impactite glass, 214; in uranium minerals, 198; seven-component diagrams, 197; structure of orthophosphates, 182; *Caucasus*, in acid intrusions, 7; *Dnieper*, in accessory minerals, 198; *Khibiny & Lovozero*, in eudialyte, zirconites, 116; *Sardinia*, in tourmalinite, 198; *Siberia*, in trap-rocks, 35; *Skaergaard*, in layered rocks, 228; *USSR*, in pyroxenes, pyroxenites, 114; *Verkhogansk*, in florencite, cherlomite, 143

- compounds: orthosilicate solid solutions, 8; silicates of garnet & thalennite type, 8; synthesis of niobates, tantalates, 105

- minerals: IR spectra of carbonates, 16; lanthanide absorption, 289

- ores, *Brazil*, 185

Rare elements, genetic types, book, 9; *Pacific*, in extrusive rocks, 35

Rare gases, in chondrites, 122, 212

Rare metals, *Bulgaria*, minerals in pegmatite, 273

Rathite-I, structure, 16

Rauhaugite, *Norway*, O isotopes in, 291

Recchio river v. Italy

Red beds, *Catskill mountains*, clay minerals in, 13; *Kerguelan*, pyroclastic, 71; *South Africa*, palaeomagnetism, 253

Red clay, *Africa*, classification tests, 13, origin, mineralogy, 13

Redon v. France

RED SEA, brines, 118; foraminiferal tests, 294; origin of hot brines, 118; Precambrian rocks, 7; U isotopes in seawater, 118

Reevesite, in meteorite, opt., X-ray, 129

Reflectance, of ore minerals, 251; of rock powders, 251; *Kara-Kum*, of sands, 161

Refractive indices, determination by Brewster angle method, 83

Refractometer, 309

Refractory materials, high-alumina, 8; phase equilibria & microstructure, 89; vaporization, 24; *Lower Silesia*, magnesia-silicate, 103; *Wales*, from underclays, 264

Refunsa v. Zambia

Renierite, identification, 141; thermal stability, 191

Fennoscandian v. Antarctica

Feocin v. Spain

Republic v. Washington

Researches in geochemistry, book, 87

Teversite, *Allarechensk*, anal., opt., X-ray, 143

Reunion island v. Indian Ocean
Revelstoke, British Columbia v. Canada
Rézbányite, Algeria, 18 ; Sweden, X-ray, 143
Rhenium, determination, 57, 123 ; in chondrites, 123 ; Australia, in molybdenite, 57 ; Dzhezkazgan, in sulphide ores, 187 ; Romania, in molybdenite, 57, 222
Rheo-ignimbrite, Norway, 317
Rhine v. Germany
RHODE ISLAND, Westerly, granite, 250
RHODESIA (SOUTHERN RHODESIA), age of dolerites, 253 ; Karroo basalts, 148 ; Ni-Cu ores, 186 ; S isotopes in sulphide ores, 187 ; Great Dyke, layered basic rocks, 173, ultra-mafic cumulate, 227 ; Kamativi, Sn pegmatites, 276 ; Lomagundi, ores & regional metamorphism, 183 ; Marangudzi, hastingsitic amphiboles, 305 ; Masukwe, Nuanetsi, igneous complex, 236 ; Nuanetsi, Karroo basalts, 148, olivine-rich basic lavas, 152, palaeomagnetism of igneous rocks, 252 ; Sanyati mine, arsenopyrite, 222 ; Urungwe, ores & regional metamorphism, 183
Rhodium, Yakutia, in ultrabasic & alkaline rocks, 112
Rhodizite, structure, 269 ; Madagascar, structure, 180
Rhodochrosite, identification, 259 ; IR absorption, 224 ; optical absorption, 265 ; Arkansas, 338 ; Virginia, 79
Rhodonite, free energy of formation, 24 ; optical absorption, 265 ; New South Wales, comp., 305
Rhône river v. France
Rhum, Inverness-shire v. Scotland
Rhyodacite, melting & crystallization, 287 ; Ivory Coast, comp., 63 ; Mauritania, 321 ; Queensland, 152, 323
Rhyolite, altered, comp., 176 ; Antarctica, 323 ; Colorado, in caldera, 68 ; Mozambique, age, 165 ; New Guinea, 64 ; S.-W. Africa, 235
-obsidian, activation analysis, 198
Rhyolitic rocks, Chile, comp., 325 ; Taupo, origin, comp., 325 ; Yellowstone Park, altered by hot springs, 296
Richter v. Mauritania
Richterite, synthesis, opt., 288 ; Corsica, potassic, anal., X-ray, 48 ; Siberia, anal., opt., 215
Richtersveld, South-West Africa v. South Africa
Riebeckite, IR, 336 ; isomorphism, comp., X-ray, 306 ; Andhra Pradesh, in syenite, 48 ; New Hampshire, Li in, IR, 135
Ries v. Germany
Ries Kessel v. Germany
Rieussec v. France
Riley Co. v. Kansas
Ring-complex, Oka, Quebec, origin, mineralogy, 46 ; Queensland, 152, 323 ; Rhodesia, 236
Rinkolite, Kola, weathering, 222
Rio El Tambor v. Guatemala
Rio Grande v. New Mexico
Rio Tinto v. Spain
Ripidolite, Moravia, formed from axinitite, 49
Rockbridgeite, Portugal, X-ray, 252
Rock crystal v. quartz
Rock joint minerals, Bohemia, in basic intrusion, 77
Rock Run v. Alabama
Rocks, analysis by electron probe, 86 ; cleavage, 160 ; determination of grain-size of minerals, 257 ; diffractograms of amorphous powder, 84 ; experimental leaching, 195 ; experimental production of fissures, 104 ; geotechnical classification, 60 ; interaction with aqueous solutions, 112 ; micro-fracturing & deformation, 250 ; mineralogical & granulometric analyses, 169 ; permeability, 161 ; photographs to show texture, 169 ; practical study, book, 6 ; Sb in, 207 ; spectral reflectance of powders, 251 ; thin-section, epoxy impregnation, 170 ; Caucasia, thermal properties, 336 ; Israel, sulphur cycle, 297 ; South Africa, densities, 253
Rock salt v. halite
Rocks & minerals, book, 7
Röderbergite, Norway, O isotopes in, 291
Rodiani v. Greece
Roedderite, in meteorite, anal., X-ray, 124
Rogaland v. Norway
ROMANIA (RUMANIA), crystalline schists, 158 ; metallogenetic map, 271 ; Re in molybdenites, 222 ; sodaite, 95 ; volcanic & intrusive rocks, 319 ; Adam Clisi, Dobrogea, carbonate rocks, 116 ; Alsdrâkous quarry, Transylvania, basalts, 237 ; Apuseni mts., volcanic rocks, 319 ; Baia de Aries, Apuseni mts., polymetalliferous ores, 98 ; Baia (Baia) Mare, bentonites, 13, hydrothermal alteration of volcanic rocks, 72 ; Baia Bihor, Re in molybdenite, 57 ; Calimani mts., volcanic rocks, 319 ; Căpăs, Cluj, Fe ore, 187 ; Carpathians, carbonate rocks, 202, geosynclinal ores, 97, limestones, 154, origin of molasse deposits, 243, sulphide ores, 274, radioactivity of crystalline rocks, 230, spilites, keratophyres, ophiolites, 319 ; Cernavoda, Dobrogea, sands, carbonate rocks, 243 ; Deva, Cu ores, minerals, 186 ; Ditrö (Ditrău), carbonate minerals, 128, nepheline syenites as ceramic materials, 189, new carbonate mineral, 128, rare-earths in alkaline rocks, 115 ; Dobrogea, geosynclinal ores, 97, green schists, 248 ; Drocea mts., Re in molybdenite, 57 ; Garghia mts., volcanic rocks, 319 ; Harghita, andesite, Fe ores, 17, volcanic rocks, 319 ; Iacobeni, Fe ore, 102 ; Metalliferous mts., hydrothermal veins, 275 ; Oaș-Gutîr mts., volcanic rocks, 319 ; Oașa, Sebeș mts., metamorphic rocks, 248 ; Ocna de Fier, Banat, minerals in skarn zone, 245 ; Oravita, Re in molybdenite, 57 ; Ostra, Carpathians, baryte deposits, 102 ; Persani mts., Carpathians, ophiolites, 319 ; Poarta Alba, Dobrogea, carbonate rocks, 116 ; Poiana Rusă, metallic ores, 183, Pb-Ag minerals, fluorite, baryte, 280 ; Rusăia, Fe ore, 102 ; Urdele, metamorphic rocks, 248
Roncegno Valsugana v. Italy
Rondonia v. Brazil
Roscherite, New Hampshire, 163
Rōséki ores, Japan, origin, 92, sericite in, 306, X-ray, d.t.a., comp., 92
Rosh Pinah, South-West Africa v. South Africa
Rosiers v. France
Rossbodenalpelli v. Switzerland
Ross island v. Antarctica
Rotation properties, of ore minerals, 145
Rotorua, North Is. v. New Zealand
Rouchoux v. France
Roughton Gill, Cumberland v. England
Roxbury v. Vermont
Rozdol v. Ukrainian SSR
Rubidium, abundance in Earth, 197 ; determination, 171, 198, 259 ; in Earth's crust, 290 ; in Earth's mantle, 228 ; in eclogite, 295 ; in feldspar lattice, 309 ; in groundwaters, 205 ; in igneous & related rocks, 292 ; in K-feldspars, 219 ; in mantle-derived rocks, 228 ; in metamorphosed granitoids, 199 ; in muscovite, 136 ; in potassium deposits, 294 ; in river water, 204 ; in sylvine, 262 ; in waters, 111
Africa, in basalts, 148 ; Bulgaria, nitrogenous thermal waters, 119 ; Caspia in waters, 296 ; Georgian SSR, in granite rocks, 199 ; Italy, in potassic lavas, 292 ; Kazakhstan, in granite contact zone, 7, granitoids, 7 ; Marlsburg, in granites, 114 ; Mozambique, in feldspars, 222
Sayan, in granitoids, 199 ; Tuscany, acid rocks, 34
Ruby, asterism, 196
Rudists, aragonite in, 339
Rügen v. Germany
Rughe, Sardinia v. Italy
Ruhr basin v. Germany
Rumania = Romania
Rusăia v. Romania
Rushayite, Virunga, 227
RUSSIAN SFSR, Au ores, 278 ; palaeotemperature of Cretaceous, 206 ; rare earths in platform sediments, 197, 201
Allarechensk, Kola, retgersite, 143 ; Andreminsk, Urals, fluorite ores, 22 ; Arkhangelsk, semi-precious stones, 196 ; Ayu-Dag, Crimea, anthophyllite, 306 ; Caucasus, Ca, O isotopes in limestone, 202, geothermal gradient, 336, natural gas in Cretaceous, 297, Ra, Th, K in sediments, 202 ; Ciscaucasia, argillaceous sediments, 244, geothermal gradient, 336, hydrocarbon gases in aquifers, 297, groundwaters, 205, S isotopes in mineral waters, 41, skarn zone, 246 ; Crimea, alusilite, 268, epidote, 304 ; Dagestan, bituminous, of rock organic matter, 203, organic C in sediments, 116, waters in oil deposits, 205 ; Galkinskoye, Urals, Pb isotopes in galena, 22 ; Karelia, age of uraninites, 202 ; Ar in uraninites, 41, micaceous pegmatites, 199, non-metallic mineral resources, 102, rare-earth in pyroxenes & pyroxenites, 114, semi-precious stones, 196, uraninite, 198, volcanic complex, 321 ; Karelia, igneous & metamorphic rocks, 149 ; Kempirsay, chrome-spinelilites in pluton, 223 ; Kerch peninsula, Hg in mud, volcano deposits, 199 ; Khibiny (Khibiny), apatite nepheline syenites, 239, barsanite, 252, celadonite, 218, combustible gases in khibinite, country rock, 119, elements in ground-waters, 119, galena in pegmatites, 253, hackmanite, 220, ijolite, urtites, 234, kaolinite clays, 92, nepheline syenite, 283, rare-earths in weathered eudialyte, 116, viliaumite in rock-forming minerals, 63 ; Kola peninsula, calcarite, 224, epidotes, allanites, 133, granulites, charnockites, 158, holmquistites, 48, kyanite shales, 103, rare-earths in alkaline rocks, 197, rare-earths in pyroxenes & pyroxenites, 114, semi-precious stones, 196, S isotopes in Cu-Ni ores, 291, ultra-basic rocks, 239 ; Kostroma, Co in mud, 205 ; Kovdor, pyroxene olivine rocks, 8
Kovdor, Kola, phlogopites, 136 ; Kubach, Crimea, analcite, 221 ; Kursk, bauxites, 102, siliceous Fe rocks, 294
Lovozero, Kola, apatite nepheline syenites, 239, barytolamprophyllite, orthorhombic lamprophyllite, 129, hackmanite, 220
Murmanite, 288, nephelines, 59, rare earths in weathered eudialyte, 116, rocks, minerals, trace elements, 6
Mikhailovka, Kursk, trace elements in Fe ores, 199
Moncha (Monche), altered Cu-Ni ores, 307, elements in ground-waters, 119
Monchegorsk, pegmatites, pluton, 152, Pb-bismuthide, 226 ; Nizhni Tagil, Sverdlovsk, delafossite, 141
Nyarta-syu-yu

RUSSIAN SFSR, (contd.)

river, Urals, chernovite, 227; Orenburg, U in sedimentary rocks, 37; Osetia, Pb-Zn ores, 273; Pay-Yer mt., Urals, jadeitic rocks, 158; Pechenga, altered Cu-Ni ores, 307; Pechenga-Lotta interfluvie, ultrabasic rocks, sulphide ores, 97; Pechora Urals, magnetite-sphalerite albitite, 156; Salmi, Karelia, rapakivi granites, 323; Satkin, magnesite, 23; Sibay, Urals, sulphide ores, 99; Solnechnogorsk, Crimea, datolite, 46; Takhtavumchorr mt., Kola, weathering of rinkolite, 222; Tatars, Caucasus, ore minerals, 334; Turiy peninsula, Kola, alkaline intrusions, 150; rare-earths in alkaline rocks, 197; Tyrynya, Caucasus, pyroxenes, 217; Uchansk, Urals, globular pyrite, 20; Ufaleyka river, Urals, Fe-Ti ores, 74; Ukrainka, Crimea, laumontite, 53; Upper Kama, KCl in sylvinites, 23; Urals, accessory minerals of gabbro-peridotite, 7, age of syenite minerals, 3, anhydrite, gypsum in pyrite ores, 291, B in oil, 41, miasomite, 283, origin of pyrite ores, 99, quartz, 309, quartz grains in eclogite, 158, plumbopyrochlore, 226, Sc in minerals, 114, sphalerite, 336, thoro-aeschynite, 130, tuffaceous mudstones, 155, weathering, 164, weinschenkite, 144; Urup, Caucasus, chalcopyrite in pyrite ore, 113; Urushten, rare-earths in magmatic complex, 7, trace elements in magmatic complex, 7; Vishnevye mts., alumo-aeschynite, 130, barylite, 109; Volga, B in oil, 41; Volgograd, Sr in evaporites, 117; Vorkuta, loam, 112; Voronezh, basalt, diabase, 320, ultrabasic explosion breccia, 149; Vuoriyarvi, Kola, norsethite, 312; Yaroslavl, Co in muds, 205; Yena, Kola, boreholes in mica deposit, 102

—, SIBERIA, accessory minerals in igneous rocks, 7; age of organic sediments, 38; age of Pleistocene deposits, 167; amphiboles from carbonatites, granitoids, 306; Au ores, 278; calzirite, 224; chemistry of sedimentary rocks, 201; clinoholmquistite, 130; diamantiferous diatremes, 22; effusive basalts, 145; garnet from kimberlite, 45; halite, evaporite beds, 280; moissanite, 54; phosphorites, 281; plant disorders near ore-deposits, 42; pyroxenes, 217; rare-earths in trap-rocks, 35; trap-rocks, 35, 229; Aldan, Au ore, 184, metamorphic amphiboles, 305, quartz, 309, U, Th in metamorphic rocks, 40, 296; Allakh-Yun', Au ore, 184; Altai (Altay), ore zones, 183, U in granitoids, 36; Altai-Sayan, alkalies in igneous rocks, 114, Se, Te in sulphide ores, 183; Amur, trace elements in Au, 113; Angara, potassium granitoids, 321; Arbagar, hypogene ores, 278; Baikal, Be, alkali metals in pegmatite minerals, 50, blue diopside, 217, magmatic & metamorphic rocks, 149; Berelekh, Au ore, 184; Bor-Uryakh chrome in dunite, 237, contact metamorphism around pluton, 215, ultrabasic rocks, 234; Bugul'min, Rb, Li in granitoids, 199; Bukuka, Transbaikal, lillianite, 314; Burpala, Baikal, hambergite, 313; Caucasus, baryte, 107; Chagve-Uay, Kola, alkaline rocks, 150; Chud' yavr lake, Kola, paracharnockites, 158; Crimea, hornblendites, 135; Crimean mts., trace elements in rocks, 115; Darasun, Transbaikal, owyheeite, 310; Dzhida river, minerals in granitoids, 7; Dzhidinsk, Transbaikal, biotites, 49; Dzhylkydal, Gorny Altai, cinnabar from tetrahedrite, 100; East Sayan, age of alkali rocks, 83,

clinopyroxenes, 134, rare-earths in alkaline rocks, 197; Emel'dzhab, Aldan, age of phlogopite, 256; Enisei ridge, thorianite, 55, ultrabasic rocks, 150; Enisei river, age of magmatic rocks, 82; Eravna, Buryat, magnetite-jacobsite series, 311; Galinsk, alkaline ultrabasic rocks, 234; Gorbiachin river, metasomatism, 230; Gorny Altai, svanbergite, 58; Goryachegor, alkaline rocks, 298; Gula, carbonatite, 326; Inaqua, Yakutia, Pt group metals, 112, stillwellite, 53; Indigirka, Au ore, 184; Ingil's river, kimberlites, 234; Khangilay-Shilinsk, Transbaikal, Au in granites, 35; Khar-Ulakh, cinnabar, ludwigite, 100; Kharayelakh mts., sub-alkaline trap magmatism, 150; Khatanga bay, danburite, 222; Khuperi mt., Severnaya basin, igneous rocks, sulphide minerals, 150; Kiya-Shaltyr, hydrocarbon gases in pluton, 298; Kolyma, Au ores, 184, evaporites, 280, Hg ores, 100; Kolyvan', Altai, Au in granites, 35; Kugda, calzirite, 224, phlogopite-olivine rocks, 234; Kureika (Kureyka), datolite, prehnite, apophyllite, 133, hydrothermally mineralized lavas, 157; Kurylykenskoye, bitumens in hydrothermal veins, 144; Kuzbas, trap-rocks, 320; Kuznetsk Ala-Tau, blue diopside, 217; Lena, Au-quartz veins & sulphide ores, 277; Levo-Ingoda, Transbaikal, Al-mica, 306; Lower Tunguska river, palagonite traps, 234, trap rocks, 233; Magan, alkaline ultrabasic rocks, 234; Mai'mechka-Kotui (Maymeka-Kotuy), alkalis in lavas, sills, dykes, 233, fused sandstone veins, 156, nepheline-pyroxene rocks, 68, rare-earths in pyroxenes, pyroxenites, 114; Mama, spherical aggregates in granite, 80; Markovo, Irkutsk, organic matter in basement rocks, 295; Munilkan creek, Yakutia, hydrogrossular, 162; Minusinsk (Minussinsk), nepheline syenite, 283, pyrope peridotite, 62; Nera, Au ore, 184; Noril'sk, altered Cu-Ni ores, 307, microstructures of intrusion, 238, Ni in gabbro-dolerite, 114, olivine gabbro-diabase, 112, pumpellyite, 304, violet anhydrite, 203, water content of magma, 114, zvyagintsevite, 225; Novoberezovskaya, Transbaikal, hypogene ores, 278; Ob-Irtys interfluvie, clay minerals, 91; Odikhincha, alkaline ultrabasic rocks, 234; Polousnyi ridge, Yakutia, metamorphosed feldspar, 219; Sangilen, Tuva, hiortdahlite, 304; Sayan, andesite-dacites, 292; Shakhtam, Transbaikal, svanbergite, 313; Shilka, Transbaikal, hypogene ores, 278; Sor, inclusions in Cu-Mo ores, 187; Sorsky, Khakusya, K-feldspars in metasomatic rocks, 50; Stanovoy range, magmatic & metamorphic rocks, 149, porphyry dykes, 149, zoning of sanidine phenocrysts, 219; Synnir, Baikal, biotite-pyroxene-apatite rocks, 321, Mg skarn, 330, pseudoleucites, 283, pseudoleucites, fergusites, 234; Taezhny, Yakutia, calcioaugirine, 129; Taizmyr (Taymyr), evaporites, 280, granitoids, 149, ilmenite schist, 158; Talmakh, Pd minerals, 226; Tatar, hydrocarbon gases in pluton, 298; Tigerek, Gorny Altai, accessory ore minerals, 233; Transbaikal, accessory minerals in granites, 55, formation temp. of baryte, 143, Pb-Zn ores, 33, Rb, Li, Ba, Sr in granitoids, 199, sphalerite as a geothermometer, 140, Ta, Nb in wolframite, 224, trace elements in Pb-Zn ores, 184; Tuttonchana basin, hydrothermally mineralized lavas, 157; Tuva, biogeochemical seleniferous pro-

vince, 206, origin of alkaline rocks, 239; Udkansk, Cu, Ag minerals, 186; Ulkansk, Zr in rocks, minerals, 200; Uryup river, Kuznetsk Ala-Tau, olivine nephelinite, 233; Verkhoyansk, evaporites, 280, rare-earths in florencite, cheralite, 143; Vitim-Patom, mineralization & regional metamorphism, 183; West Sayan, spilikeratophyre, 283; West Siberian plain, hydrocarbons in sediments, 116; Yakutia, C isotopes in diamonds, 201, eclogite, 216, eclogite pyroxenes, 305, etched diamonds, 335, Fe, Si, organic matter in waters, 40, metallogenetic provinces, 183, peridotites, eclogites, 62, prospecting for diamonds, 102, pyrope-bearing ultrabasic rocks, 145; Yana river, Hg ores, 100

—, SOVIET FAR EAST, biogeochemistry of Sn ores, 206; Bezymyanniy volcano, agglomerate flow, 153; Chukotka, Hg ores, 100; Dezhnev, nepheline syenite, 283; Kamchatka, Hg ores, 100, plutonic & volcanic rocks, 320, volcanic S deposits, 240; Khankay, igneous rocks, 321; Khrustalnoye, Sn ores, 20; Koryak, Hg ores, 100, Neogene volcanism, 153; Kunashir island, Kuriles, age of rocks, 82; Kuriles, volcanic S deposits, 240; L'ifuzdin, Sn ores, 20; Maritime Kray (Territory), astrophyllite, 139, Triassic sediments, 244; Mendeleyev volcano, Kunashir island, pyrite, 99; Miao-Ch'iang, Sn ores, 20; Olyutor, Koryak mts., trachyanandesite, syenodiorite, 233; Paushetka, minerals in thermal waters, 157; Primorskoye, Sn ores, 20; Sakhalin, age of granitoids, 82; Sikhote Alin, igneous rocks, 321; Srediny range, Kamchatka, sulphide ores, 275; Taganay peninsula, age of granitoids, 83; Urup island, age of rocks, 82; Ruthenium, in chondrites, 126; Yakutia, in ultrabasic rocks, 112

Rutile, cohesive energy, 76; force constants, 335; interband Faraday rotation, 14; morphology, 333; stability, 105; synthesis of monocrystals, 191; Kazakhstan, Sc in, 53; Wallis, 185

—like mineral, New South Wales, X-ray, 54

—structure compounds, study of defects, 24

RWANDA (RUANDA), Buranga, U, Th minerals in pegmatites, 322; Lutu, Sn ores, 188; Muhungwe, Ruhengeri, feldspar replaced by cassiterite, 188

Ryūjima mine, Honshu v. Japan

S-1, Mg in, 5; Sr, Rb in 259

Saar v. Germany

Saar-Nahe-Pfalz v. Germany

Sacramento v. Brazil

Safaga v. Egypt

Sagnette v. France

St. Austell, Cornwall v. England

St. Gotthard v. Switzerland

St. Helena v. Atlantic Ocean

St. Joe v. Idaho

St. Maurice-Chateauneuf v. France

St. Minver, Cornwall v. England

St. Paul island v. Indian Ocean

St. Paul's rocks v. Atlantic Ocean

St.-Pierreville v. France

Saipan v. Pacific Ocean

Sakhalin, Soviet Far East v. Russian SFSR

Salfassia v. Italy

Salambidive v. Malawi

Sallette mts. v. France

Saline deposits, conference, 261; quartz in, 244; Tunisia, with quartz, dolomite, pyrite, 154

Salisbury v. North Carolina
Salito, Mysore, anal., opt., 305
Salitre v. Brazil
Salmchateau v. Belgium
Salmi v. Russian SFSR
Salmo, British Columbia v. Canada
Salsigne v. France
Salsigne mine v. France
Salt, growth of crystals, 262
Salt v. Argentina
Salt deposits, behaviour of B, 203 ; magnetic spherules in, 302 ; *Baja California*, 71 ; *Kansas*, 262
Salt dome genesis, 262 ; intrusion temperatures, 80
Salt lakes, Caspian plain, Sr in, 297
Salto Nacuima v. Venezuela
Salton Sea v. California
Samarskite, anal., X-ray, 54 ; USSR, rare earths in, 198
Samava v. Congo
Sanbornite, synthesis, 286
Sand, anisotropy of magnetic susceptibility, 70 ; beach, shape of grains, 327 ; evolution simulation, 69 ; experimental production from granite, 283 ; in blast-furnace slag, 108 ; morphometry, 240 ; *Haute-Savoie*, radioactive, 70 ; *Kara-Kum*, spectral brightness, 161 ; *Soviet Central Asia*, radioactive, 293 ; *Tanganyika*, Neogene, 244 ; *Wadro Wielkie*, Au in, 18
Sand river, Orange Free State v. South Africa
Sandstone, development of authigenic silica, 71 ; IR reflectance spectra, 76 ; Li in, 202 ; *Adriatic*, cemented by carbonate, 242 ; *Apennines*, turbidity current structures, 70 ; *Colorado*, U isotopes in, 294 ; *Congo*, minerals in, near Cu ores, 329 ; *Dalarna*, Jotnian, 146 ; *Germany*, grindstone, 328 ; *Margherita di Savoia*, formed from tuffs, 70 ; *New South Wales*, Devonian, 155 ; *Ofanto river*, minerals in, 70 ; *Parma*, structures, 70 ; *Siberia*, fused, anal., 156 ; *Silesia*, origin, 71 ; *Thuringia*, facies variation, 243, with bleached zones, 243 ; *Western Australia*, beach-rock, 71
Sangdong v. Korea
Sangilien, Siberia v. Russian SFSR
Sanidine, paramagnetic resonance of Fe, 15 ; synthesized from albite, 110 ; *Corsica*, from minette, comp., 48 ; *Etna*, in lava, 318, in lava, X-ray, 61 ; *Hocheifel*, in trachyte, 217 ; *Italian Dolomites*, intergrown with albite, 232 ; *Italy*, cryptoperthitic, 50 ; *Stanovoy Range*, phenocrysts, zoned, opt., 219 ; *Utah*, ferriferous, comp., X-ray, 330 ; *Wakayama*, 137
— high albite series, X-ray, 219
Sanjanite, Argentina, opt., X-ray, IR, d.t.a., t.g.a., 314
San Juan mts. v. Colorado
San Leone, Sardinia v. Italy
San Luis v. Argentina
Santa Rita v. New Mexico
San Venanzo v. Italy
Sanyati mine v. Rhodesia
Saponite, Western Australia, 92
Sapphire, blue colour, 223 ; colour & trace elements, 311 ; growth from melt, 190 ; *Ceylon*, asterism, 196 ; *Ontario*, 196
Saphirine, Mössbauer effect, 177 ; structure, 267 ; *Tanzania*, X-ray, 144
Sardinia v. Italy
Särna v. Sweden
Sarntal v. Austria
Sasyk-Sivash v. Ukrainian SSR
Satkin v. Russian SFSR
Satnur v. India

Saturation diagrams, for ore-deposits, 275
Sauerland v. Germany
Saxony v. Germany
Sayan Shanda v. Mongolia
Sayan, Siberia v. Russian SFSR
Scalpay, Inverness-shire v. Scotland
Scandium, determination, 86, 198 ; geochemistry, 111 ; *Caucasus*, in ultrabasic rocks, 200 ; *Kazakhstan*, in pegmatite minerals, 53 ; *Tadzhikistan*, in granitoid rocks, 35 ; *Urals*, in minerals near granodiorite contact, 114
Scandium-perrierite, Kazakhstan, anal., X-ray, 53
Scapolite, Idaho, in Precambrian, comp., opt., 52 ; *Lusaka*, in carbonate rocks, 220 ; *Ontario*, in litchfieldite, 330
— rocks, *Idaho*, comp., metamorphic grade, 52
Scapolitized rocks, Zambia, comp., 63
Scarborough, Yorkshire v. England
Scawtite, Honshu, 139
Schaenzel v. France
Schaurite, S.-W. Africa, anal., opt., X-ray, 130
Scheelite, diffusion of Ca, 192 ; reflectance spectrum, 58 ; *Korea*, fluorescent, in quartz veins, 20 ; *Turkey*, with pyrite, stibnite, cinnabar, 100
— ore, *Brazil*, 277 ; *Korea*, 276
Schefflerite, Banat, X-ray, 245
Scheldt river v. Belgium
Schelingen v. Germany
Schiller, in labradorite, 15, 51
Schist, Be in, 199 ; crenulated, formed by metamorphic differentiation, 73 ; garnetiferous, mineral equilibrium in, 330 ; U, Th in, 296 ; *Bergell* & *Adamello*, origin, 325 ; *Carpathians*, radioactivity, 230 ; *Cascades*, 65 ; *Congo*, altered to syenite, 325 ; *Elgin*, 317 ; *Héralt*, regional lineation, 237 ; *Hungary*, age, 256 ; *Ivory Coast*, Birrimian, comp., 63 ; *Izera mts.*, inclusions in leucogranite, 232 ; *Malawi*, comp., 235 ; *New Zealand*, reaction with hot water, 72, Se in, 39 ; *Norway*, garnets in, 316 ; *Pyrenees*, comp. of samples, 39, with altered cordierite, 304 ; *Romania*, 248, microstructural elements, 158 ; *Solomon islands*, age, 2 ; *Spain*, 332, age, 83 ; *Sudetes*, 63, metasomatic origin, 72 ; *Switzerland*, 332 ; *Valais*, comp. of rock, garnet, 133
—, albite, *Bosnia*, comp., 232 ; *Japan*, 159
—, chlorite, *Massif Central*, 331 ; *Shikoku*, comp., 137 ; *Styria*, 247 ; *Virginia*, 151
—, glaucomophane, in mobile belts, 246 ; *California*, 333 ; *Cottian Alps*, 157 ; *Turkey*, 158
—, graphite-sericite, *Tatras*, Mo, V in, 39
—, ilmenite, *Taymyr*, 158
— belt, *Sierra Leone*, mineral resources, 234
Schistosity zones, 246
Schorlomite, Kazakhstan, Sc in, 53 ; v. also andradite-melanite-schorlomite series
Schorlomite, synthesis, 29
Schungite, Karelia, 102
Science of ceramics, book, 88
Scoresby Sund v. Greenland
SCOTLAND, ages of metamorphic rocks, 2 ; Carboniferous lava flow, 60 ; *Lewisian granites*, 315 ; Tertiary geomagnetic field reversal, 337 ; titanomagnetites, ferrian ilmenites, 223 ; *Highlands*, age of granite, 168, age of slates, 2 ; *Galloway*, mineral localities, 252
—, *ABERDEENSHIRE*, gabbros, 60 ; younger gabbros, 161 ; *Arnage*, intrusive gabbros, norites, xenoliths, 153, norites, 60 ; *Belhelvie*, layered basic rocks, 173 ;

Haddo House, intrusive gabbros, norite xenoliths, 153, norites, 60 ; *Insch*, layer basic rocks, 173
—, *ARGYLLSHIRE*, *Ardnamurchan*, fault fractures, 147 ; *Glas Lilean vent*, *Ardnamurchan*, tuffsite, 147 ; *Morvern*, fault fractures, 147 ; *Sunart*, faults, fracture 147
—, *AYRSHIRE*, mineral localities, 252 ; *Largs*, crystallization of teschenite, 236
—, *BANFFSHIRE*, sedimentary & metamorphic rocks, 317 ; *Gollachy burn*, *Buckie*, and site, 317
—, *DUMFRIESSHIRE*, Ca, Si minerals, 252
Langholm, geology, 88
—, *INVERNESS-SHIRE*, *Cullins*, *Skye*, layered basic rocks, 173 ; *Moidart*, faults, fractures, 147 ; *Outer Hebrides*, metamorphosed pegmatites, basic dykes, 240 ; *Rhum*, felsites, granophyre, breccia tuffsites, 230, layered basic rocks, 173
Scalpay, picritic rocks, 61 ; *Skye*, picritic rocks, 61, 227, zoned ultrabasic rocks, 147
—, *KIRKCUDBRIGHTSHIRE*, mineral localities, 252
—, *LANARKSHIRE*, *Crawfordjohn*, Ti doritic essexite, 35
—, *MORAYSHIRE*, *Elgin*, metamorphic sedimentary rocks, 317 ; *Lossiemouth*, minerals from borehole, 162
—, *SHETLANDS*, metamorphic rocks, 73
—, *SUTHERLAND*, Lewisian rocks, 332 ; *Alla loch*, *Assynt*, feldspathic syenites, 147 ; *Borolan*, *loch*, myrmekite-like intergrowths, 59
Scott mt. v. Oklahoma
Sea-bed prospecting, 170
Searles lake v. California
Seas, world-wide regression, 353
Sea-water, Au in, 118 ; C isotopes in, 29
Cu, Fe, Mn in, 41 ; extraction of magnesia, 147 ; O, S isotopes in, 117 ; precipitation of phosphates, 294 ; salting-out of non-electrolytes, 118 ; solubility of Ca carbonate, 193 ; Se in, 204 ; stability of aragonite, 142 ; trace elements during solar evaporation, 40 ; trace elements, 171 ; U isotopes in, 118 ; *Bahamas*, 1 in, 41 ; *Lack Sea*, U isotopes, in, 29
Connecticut, reaction with Cu slag, 80
Sedimentary petrology, textbook, 88
Sedimentary rocks, Li in, 202 ; marine clay minerals in, 92 ; multivariate analysis, 327 ; on moon, 339 ; Sc, Fe, Yb in, 117 ; significance of clay minerals, 176 ; Sr isotopes in, 238 ; synthesis of hydrocarbons, 295 ; *Alps*, heavy mineral suites, 7 ; *Apennines*, clastic formation, 70, heavy minerals in, 70 ; *Ciscaucasia*, reducing environment, 244 ; *Ghana*, comp., 280 ; *New South Wales*, Devonian, 155 ; *New Zealand*, reaction with hot water, 7 ; *Orenburg*, U in, 37 ; *Portugal*, 148 ; Russia, rare-earths in, 197, 201 ; *Saar-Nahe-Sen*, trace elements in, 37 ; *Siberia*, average comp., 201 ; *Sweden*, comp., 230, metamorphosed, 246, palaeocurrents in delta deposits, 155, primary structures in Precambrian, 155 ; *Taiupo*, geosynclinal comp., 325 ; *Tien-Shan*, Mo in, 200
United States, compilation of analyses, 6 ; *Washington*, palaeocurrents, heavy mineral as, 67
Sedimentation, accumulation rates of Ba, Ca, Ag, 293 ; depth indicators for carbonates, 241 ; differentiation in platform & geosynclinal basins, 36 ; experimental tectonite lamination, 69 ; influence of volcanism, book, 6 ; oceanic rate, 241 ; *Angoulême*, Cenomanian, 242 ; *Apennines*, turbidite

sedimentation, (contd.)
 currents in sandstones, 70; *Caribbean*, isotopes in cores, 80; *Indian Ocean*, rate, 241; *New South Wales*, cyclic, 155; *Ontario*, structures in Huronian, 244; *USSR*, environment during Triassic, 244
 sedimentology, cyclic sedimentation, book, 88

ediments, amino acids in, 37, 38; calculation of sedimentological parameters, 170; carbonate, nomenclature of particles, 327; deep-sea, Au, Ir, Pt in, 43; deep-sea, I in, 202; deep-sea, Ir, Os in, 293; determination of insoluble component, 84; detrital, genetic model, 69; diagenesis, book, 88; diagenetic distribution of minor elements, 204; diffusion of gas, 104; fresh-water, F in, 37; geochemical formation of paraffins, 38; grain-size distribution, 240; impregnation for palaeomagnetic measurements, 257; magnetic grain-size effects, 336; marine, clay minerals in, 92; marine, n-paraffins in, 30; Palaeozoic aqueoglacial sequence, 71; pelagic, Ba in, 117; pelagic, Mn in, 87; resulting from basalt-euclogite transition, 242; Sb in, 207; trace elements as depth indicators, 201; trace elements in interstitial waters, 204; *Arab Sea*, U isotopes & age, 169; *Arctic Ocean*, comp. of interstitial water, 204; *Black Sea*, U isotopes in, 296; *Black & Mediterranean Seas*, U, rare metals in, 201; *Bohemia*, tektite-bearing, 44; *California*, diatom-rich, varved, 71; *Caribbean*, time series analysis, 164; *Channel Isles*, 153; *Dagatan*, organic carbon in, 116; *England*, post-glacial lake, 242; *Gulf of Lion*, beach, radioactivity, 327; *Indian Ocean*, Fe, Mn, Cu in, 293; *Japan*, lacustrine, precursors of humic acid, 37; *Mikolajki lake*, lacustrine, 154; *Mississippi river*, Th isotopes in, 201; *Norway*, stream, Be in, 37; *Pacific*, deep-sea, authigenic cementation, 244; *Persian Gulf*, paraffins, fatty acids in, 203; *Saar-Nahe*, dolomite, B, trace elements, 38; *Sardinia*, lake, 61; *Siberia*, dispersed hydrocarbons in, 116, organic, Th, U, Ra, Io in, 38; *Tyrrhenian sea*, cores, 70; *Yorkshire*, with diagenetic Fe minerals, 155; *v. also* pelitic sediments

Sealand island v. Norway
Selås v. Norway
Selberg v. Germany
Selenides, book, 6
Selenite, etch patterns, 335
Selenium, & selenides, book, 172; in river water, 204; *Altai-Sayan*, in sulphide ores, 183; *Krivoy Rog*, in sulphides of metamorphic rocks, 40; *New Zealand*, in soil-forming rocks, 39, in soils, 13; *Puy-de-Dôme*, native in granite vein, 139; *Tochigi*, in chalcopyrite, pyrite, sphalerite, 113; *Tuva*, biogeochemistry, 206; *Virginia*, 79

Seleniobellite, rotation properties, 145
Seligmannite, rotation properties, 145
Sellaite, morphology, 333; *Malawi*, opt., 235
Semi-precious stones, *Russia*, 196
Semseyite, rotation properties, 145
Senhora das Fontes v. Portugal
Senke v. Germany
Senoual v. Morocco
Sepiolite, *Japan*, anal., 308; *Kyoto*, 91; *Paris basin*, 264; *South Carolina*, 12
Serbo-Macedonian massif v. Europe
Sericite, *Japan*, in roséki ores, comp., X-ray, IR, 306; *Pyrenees*, in granite, comp., 156
Serpentine, dehydration, 29; fluorescence, 250; *Banat*, comp., X-ray, d.t.a., 245; *Japan*, IR absorption, 90; *Maryland*, de-hydroxylation, 289; *Prato*, 61

—, Al-, *Superior, Lake*, structure, 268
 — group minerals, anal., opt., X-ray, d.t.a., dehydration, 307; chemical differences, 308; *Kyoto*, altered, 91; *New York*, strain-relief mechanisms, anal., opt., 135
Serpentinite, deformation, 29, 228; X-ray, 49; *Apennines*, 62, comp., 61; *Atlantic*, magnetism, 230; *Carpathians*, comp., 319; *Caucasus*, Sc in, 200; *Český Les mts.*, 62; *Colline river*, 65; *Dnieper*, ore minerals at granite contact, 97; *Lower Silesia*, refractory, comp., d.t.a., 103; *Mongolia*, 321; *Pennsylvania*, 228; *Richtersveld*, 236, comp., 235; *Romania*, 249; *Spain*, thermal behaviour, 111; *Switzerland*, Ni-bearing, 274; *Turkey*, 322; *Vermont*, 227

Serpentinization, behaviour of Fe, 149
Serpierite, *Staffordshire*, 252
Serra Geral v. Brazil
Serra Negra v. Brazil
Serro de Potosi v. Bolivia
Sèvre river v. France
Seward peninsula v. Alaska
Seymour v. Connecticut
Shakhtam, Siberia v. Russian SFSR
Shale, asphalt in, 203; carboxylic acids in, 203; Cl in, 115; Li in, 202; *Belgium*, weathered, 174; *Congo*, near Cu ores, 329; *Illinois*, resources, 175; *Kola*, with kyanite, 103; *Kyushu*, clay minerals in, 91; *Pennsylvania*, with deformed fossils, 72; *Saar*, with clay-ironstone concretions, 245; *Sicily*, metamorphosed, kerogen in, 295; *Swabia*, extraction of bitumen, 189; *Washington*, anal., 333; *Yorkshire*, geo-technical properties, comp., 164; *v. also* oil shale
 — clay, *Böhlischen*, 290
Shasta Co. v. California
Shattuckite, definition, 54; *Arizona*, formula, 54; *Congo*, X-ray, 53; *Katanga*, opt., X-ray, 221

Shear strength, *Nevada*, of zeolitized tuff, 160

Shear zone, *Bihar*, Cu in, 96

Shells, natural thermoluminescence, 83

Sherburn hill colliery, *Durham v. England*

Shetlands v. Scotland
Shetlerville v. Illinois

Shield rocks, *Canada*, comp., 74; *Quebec*, Th, U, K in, 115

Shikika, Siberia v. Russian SFSR
Shimané, Honshu v. Japan
Shimane peninsula, Honshu v. Japan
Shimo-omo, Honshu v. Japan
Shin-Furokura mine, Honshu v. Japan
Shin-Kiura mine, Kyushu v. Japan
Shinyama mine, Honshu v. Japan
Shire highlands v. Malawi

Shock metamorphism, *Saskatchewan*, in circular structure, 72

Shodo islet, Shikoku v. Japan
Shonkinite, *Turkey*, 322

Shorsch (Shor-Su) v. Uzbek SSR
Shouwangfen v. China
Shungite, Ar in, 294

Sibay v. Russian SFSR
Siberia v. Russian SFSR
Sicily v. Italy

Siderite, stability field, 27; *Australia*, in coal, 71; *Czechoslovakia*, formations, 20; *England*, in coalfield, 202; *Yorkshire*, diagenetic, 155

Siderolith formation, *Allier*, 327

Sidobre v. France
Sierra Chica de Zonda v. Argentina

SIERRA LEONE, granulites, schist belt, 234; *Freetown*, layered intrusion, 67; *Koidu*, *Sefadu*, xenoliths in kimberlite, 148; *Sula mts.*, Mo dispersed by mineralization, 112

Sierra Morena v. Spain
Sierra Nevada v. California
Sikhote Alin, Soviet Far East v. Russian SFSR
Silesia v. Poland
Silet v. Algeria

Silica, accumulated in plants, 206; accumulated in Precambrian, 201; authigenic in sandstone, 71; determination, 85, 86; far IR spectra of polymorphs, 76; hydro-thermal transformation, 107; modifications, 89; phase diagram, 28; polymorphic transformations, 107; thermal diffusivity, 250; vitreous, network model, 15; X-ray of SiO_2 -X, 309; *Cambodia*, in river waters, 119; *Illinois*, (tripoli), resources, 23

Silicate melts, at high temperatures & pressures, 24; natural, high-lime liquid, 61; Newtonian flow at high temperatures, 104; used in stone casting, 9

Silicate minerals, identification by thermal decomposition, 259; IR spectra, 58; structural formulae calculations, 84; with chains of octahedra, 177

Silicate rocks, decomposition by HF, 4; emission spectrography, 172; hydro-thermal melting curves, 195; spectral reflectance of powders, 251

Silicates, absorption methods of analysis, 85; Al atoms in, 93; aqueous solubility data, 109; exchange equilibrium in solid solutions, 112; experimental vapour fractionation, 214; high-temp. solution chemistry, 97; hydrogen-bonding sites on surface layer, 14; optical absorption spectra of iron, 76; preparation by gelling method, 193; Si-O bond lengths, 268; solution techniques for analysis, 85; thermodynamic properties, 24

Silicomanganberzelite, *Kazakhstan*, anal., opt., X-ray, 130

Silicon, chemical-mechanical polishing, 3; Compton scattering, 76; covalent bond, 182; determination, 4, 5, 171, 209, 259; determination of isotopes, 172; epitaxial growth with C, 104; inhomogeneities in single crystal, 104; in meteoritic chondrules, 209; in rocks, meteorites, 207; optical orientation, 104; single crystal preparation, 104; *Yakutia*, in waters, 40

— compounds: structure of nitride, 89; structure of polytype of SiC , 96; synthesis, X-ray of carbide, 105; X-ray of SiC-II , 54; *v. also* silica

Siljan lake v. Sweden

Sill, flow differentiation, 152, 227; *Ayrshire*, crystallization of teschenite, 236; *Reunion*, basalt-mugearite, 148; *Rhine*, diabasic, comp., 62; *Skye*, picritic, flow, 227; *Tunguska*, differentiated, 233

Sillimanite, heat of formation, 29; stability field, 194; *Dnieper*, comp., opt., 133; *New South Wales*, deposit, 281; *Tanganyika*, coexisting with topaz, opt., X-ray, 45; *Ukraine*, opt., 303

Silt, *Ontario*, comp., 18

Siltstone, *Donbas*, B in, 293; *Ontario*, comp., 244

Silver, determination, 84, 259; in deep-sea core, 293; in galena, 222; in recrystallized gold nuggets, 100; in river waters, 204; reflectivity of alloys, 258; *Idaho*, in sulphide waste, 277; *Michigan*, in contact with Cu, 54; *Udokansk*, in Cu ores, 186

— compounds: alpha-beta transition of Ag_2S , 269; optical activity of AgGaS_2 ,

Silver compounds, (contd.)

251; single crystals of AgCl , 104; synthesis, X-ray of Ag_2AuS_2 , 285
— ores, ruby, 94; *Colorado*, 100; *Hällefors*, 100; *Massachusetts*, 163; *Quebec*, Au/Ag ratio, 277; *Yukon*, 98

Simpson mine v. Connecticut

Singhbhum v. India

Sinhalite, Tanzania, anal., X-ray, 144

Sioux Co. v. Iowa

Sisco, Corsica v. Italy

Sitasaoangi v. India

Sivasamudram v. India

Sjögrenite, structure, 95

Skaergaard v. Greenland

Skåne v. Sweden

Skarn rocks, Banat, 245; *Caucasus*, pyroxenes in, 217; *Ciscaucasia*, Palaeozoic, 246; *Czechoslovakia*, 132, garnet in, 216; *Elbtal*, origin, 329; *Erzgebirge*, origin, 329; *Honshu*, with hydrated silicates, 139; *Italy*, ilvaite in, 216; *Kuruyata*, related to polymetallic ores, 47; *Sweden*, in lepites, comp., 156, with Fe ores, comp., 101; *Synnýr*, at dolomite-nepheline contact, comp., 330; *Tien-Shan*, gases in inclusions in veins, 205

Skye, Inverness-shire v. Scotland

Slag, crystallization properties, 8; emission spectrography, 5; from Cu smelting, 8; from melts of ferromolybdenum, 8; phase composition & viscosity, 9

Slate, British Isles, age, 2; *Harz*, origin of zircon, 328

Slate-ash, structural materials, 8

Slavikite, Czechoslovakia, anal., opt., X-ray, d.t.a., 313

Slick Rock v. Colorado

Slocan, British Columbia v. Canada

Smectite, Israel, in altered tuffs, 12

Smedsgården v. Sweden

Smithite, synthesis, X-ray, 107

Smithsonite, identification, 259; IR absorption, 224; *Turkey*, 273

Smrkovec v. Czechoslovakia

Smythite, synthesis, 285

Snow, crystall., 80

Sobótka v. Poland

Society of Economic Geologists, 96

Society ridge v. Pacific Ocean

Sodalite, inclusions, 282; luminescence, 251; structure, 95; thermal expansion, 220; *Etna*, in lava, 318

Soddyite, synthesis, 191

Sodium, determination, 85, 86, 198, 207; in *adularia*, 42; *Altai-Sayan*, in acid igneous rocks, 114; *Britain*, exchange equilibria in soils, 91; *Marlsburg*, in granite pluton, 114; *New Hampshire*, lost from weathered silicates, 174; *Tuscany*, in acid rocks, 34; *Vienna basin*, in waters, 296

— compounds: binding of Na_2CO_3 by bentonite, 176; conductance of metasilicate & aluminate, 24; epitaxial growth of chloride on muscovite, 111; formation of colloids in NaCl , 104; growth of NaCl whiskers, 28; helical dislocations in chloride, 335; hydrolysis of silicate, 190; location of H atoms in $\text{NaBr} \cdot 2\text{H}_2\text{O}$, 266; morphology of nitrate during dissolution, 75; synthesis of nitrate, 104; thermoelectric power of bromide, 77; structure of Na_2SiO_5 , 178; structure of $\text{Na}_2\text{Si}_3\text{O}_7$, 179; synthesis of $\text{NaI}(\text{TI})$, 104; water vapour adsorption on chloride, bromide, 118; X-ray hardening of NaCl , 249

— minerals, chloride in deep-sea cores, 327; new hydrous Na silicates, 129

Soil, Al in, 13; C isotopes in CO_2 , 41;

derived from volcanic ash, 264, 265, 327; *Andalucia*, IR absorption, 93; *Britain*, Na exchange, 91; *Chile*, from volcanic ash, 265; *Galilee*, basaltic, 264; *Israel*, basaltic, 175; *Japan*, from volcanic ash, 264; *New Zealand*, Se in, 13, 39; *Philippines*, from volcanic ash, 265; *Uganda*, from carbonatite complex, 224; *USSR*, desert, 173

Solanite, anal., opt., X-ray, 129

Solar system, origin of N compounds, 213; origin of organic matter, 212

Solids, heat capacities, 250; kinetics of phase processes, 8

Solid source spark mass spectrography, 87

Solnechnogorskoe v. Russian SFSR

Solomon islands v. Pacific Ocean

Solutions, chemistry & metamorphism, 87; thermodynamics, 87

Somerset dam, Queensland v. Australia

Somoskó v. Hungary

Sondalo v. Italy

Songwe hill v. Malawi

Sonora v. Mexico

Sor, Siberia v. Russian SFSR

Sorézois v. France

Sorey island v. Norway

Sor-Rondane v. Antarctica

Sorsky, Siberia v. Russian SFSR

SOUTH AFRICA, age of intrusive rocks in

Waterberg System, 165; age of *Ventersdorp System*, 165; banded & oolitic Fe ores, 278; C isotopes in diamond, 201; Cu, Fe, Mn in sea-water, 41; density of rocks & gravity anomalies, 253; gold, uraninite, pyrite in gold-bearing reefs, 186; *Karoo dolerites*, 148, *Karoo igneous activity*, 252; K isotopes at granite-shale contact, 118; Mesozoic basaltic rocks, 200; Mn, Cr, Ti, Ni in minerals of ultramafic rocks, 114; platinoid grains in basket, 186; pyrope-bearing ultrabasic rocks, 145; thucholite, 185

—, *CAPE PROVINCE*, *Black Rock mine*, marokite, 338; *De Beers mine*, *Kimberley*, magnetism of lavas, 337; *Insizwa*, sulphide ores, 276; *Kaapvaal*, craton structure, mineral deposits, 272; *Postmasburg*, epesite, 307; *Transkei*, *Karoo dolerite dyke*, 235.

—, *NATAL*, *Paulpietersburg*, thermal springs, 205

—, *ORANGE FREE STATE*, heavy mineral beach deposits, 188; *Sand river*, radioactivity of boreholes, 186

—, *SOUTH-WEST AFRICA*, berndtite, 126; *Dernburg*, *Karibib*, altered beryl, 216, 304; *Erongo*, fluorite, 56; *Oranjerund*, diamonds, 22; *Paresis*, age of rocks, 81, igneous complex, 235; *Richtersveld*, plutonic & dyke rocks, 236, ultramafic rocks, 235; *Rosh Pinah*, norsethite, 312; *Tsumeb mine*, schaurite, 130

—, *TRANSVAAL*, aliphatic hydrocarbons in

Precambrian, 38; heavy mineral beach deposits, 188; hydrogrossular, 133; vermiculite, 263; *Waterberg red beds*, 263; *Bushveld*, carbonate rocks in gabbro, norite, 245, layered intrusion, 173, liquid immiscibility in chromitite seam, 68, plagioclases, 269, ultramafic cumulates, 227; *Dominion reef*, alteration of zircon grains, 215; *Hendrikspoort*, carbonate rocks in norite, 245; *Klerksdorp*, Au, U in mines, 277; *Leeuwfontein*, age of syenite, 165; *Leolo mts.*, *Bushveld*, genesis of magnetite, 236; *Losberg*, *Fochville*, basic complex, 235; *Orient mine*, nsutite, 223; *Piet Retief*, pegmatites, 253; *Pilanesberg*, diabase, hypodiorite, 239; *Premier mine*,

Pretoria, graphitized diamond, 222; *Spekboom river*, K at granite-amphibolite contact, 115; *Spitskop*, *Sekukuniland*, fennitized granite pegmatites, 238; *Ventersdorp*, gold, 277, oolitic pyrite, 70; *Witwatersrand*, organic matter in Precambrian, 203

SOUTH AMERICA, Mesozoic basaltic rocks, 200; monazite, 97

SOUTH CAROLINA, *Coosawhatchie*, clay, clay minerals, 12

SOUTH DAKOTA, Pb isotopes in igneous rocks, 34; sedimentary rocks, 69; *Black Hills*, *Keystone*, spodumene, 194

Southern Rhodesia = *Rhodesia*

South Island v. New Zealand

South Savanna, Guyana v. Guyana

South-West Africa v. South Africa

Soviet Central Asia v. USSR

Soviet Far East v. Russian SFSR

Sövite, *Alnö*, pegmatite, 146, pyroxenes, 47, Sr, Ba in, 115; *Kaiserstuhl*, 62

Norway, O isotopes in, 291

Sövite rocks, *Malawi*, comp., 234

SPAIN, coiffinite, 304; fluorites, 22; Pb-Zn sulphide ores, 291; serpentinites, 111

Almadén, *Ciudad Real*, Hg ores, 275

Andalucia, clay minerals, 93; *Betic Cordilleras*, plurifacial metamorphism

glaucophane, 157; *Canfranc Estación Pyrenees*, Cu-As ores, 274; *Cartagena*, galena, 222; *Celanova*, *Orense*, metamorphic rocks, 332; *Centenillo*, *Jaén*, ore deposits, 271; *Chinchón*, *Madrid*, glauconite, 181; *Cumbres-Mayores*, *Huelva*, structure of pillow-lavas, 237; *Galicia*, orthogneisses, paragneisses, 247; *Le Florida*, Pb-Zn ores, 21; *Lugo*, age of granite, 83

Portalet pass, fluorite, 274; *Mesones*, *Guadalajara*, Fe, Mn in concretions, 154

Pinto, *Madrid*, aragonite, 162; *Recoín*, Pb-Zn ores, 21; *Rio Tinto*, pyrite ores, 17, 182; *Sierra Morena*, *Seville*, metamorphic hornblendes, 217; *Udias*, Pb-Zn ores, 21; *Yenfrito*, Pb-Zn ores, 274

Spectrographic analysis, in petrography, 5

use in geochemistry, 5

Spectrography, emission, of silicate rocks, 172; IR emission analysis, 87

Spekboom river, Transvaal v. South Africa

Spleethothem, *Okinawa Jima*, 339

Sphalerite (blende), Fe, Mn, Cd, Hg in

X-ray, 4; hydrothermal synthesis, 26

in meteorite, 210; lattice spacing, 140

microhardness, 75; solubility, 291; with

dendritic-skeletal galena, 334; X-ray fluorescence, 259; *Bavaria*, Hg in, 33

Denbighshire, 162; *Hitachi mine*, Fe S in

98; *Italy*, trace elements, S isotopes in

273; *Japan*, colorimetry, 336, comp. & cell edge, 140; *Karamazov*, In, Tl in, 200

Kazakhstan, Cd, Ge in, 310; *Norway*, metamorphism & Fe content, X-ray, 98

Philippines, with exsolved chalcocite

274; *Portugal*, X-ray, 252; *Rhodesia*, reflectivity, 186; *Silesia*, trace elements

290; *Sudbury*, magmatic in basic rocks

18; *Sweden*, comp., 143; *Tennessee*, in limestone, dolomite, 98; *Tessin*, 186

Tochigi, Se, Cu, Fe, Zn, Cd in, 113

Transbaikal, Fe content & cell parameters, 140; *Urals*, photoluminescence, 336

—wurtzite, *Fiji*, 275

Sphene (titaniite), stability, 105; *Azov*, Ga in, 200; *Dnieper*, rare-earths in, 198

Kazakhstan, Sc in, 53

Spherules, black, magnetic, in beach sands, 153; density, 215; from ice, 215; magnetic in salt deposits, 302

ilite, anal., 320; *Alps*, 230; *Carpathians*, 319; *Finistère*, comp., 318; *Sardinia*, comp., 61
keratophyre, *West Sayan*, 238
lithitization, *Tarn*, of lava flows, 61
magma stage, 258
mineral group: cation migration in $MgMn_2O_4$, 180; defects in synthetic crystals, 105; diffuse scattering, 177; Fe-Mn, synthesis, 191; Fe-Ti, ferrous ions in, 76; formed from muscovite, 288; manganite, crystall., 15; Mg-Al, order-disorder, 265, plastic deformation, 250; Mn-, synthesis, X-ray, 105; Mn-Ti-, synthesis, 191; Ni-, synthesis, X-ray, 25; solid solution series, 25; synthesis with ordered vacancies, 190; synthesis, X-ray of Mg_2SO_4 , 286; thermal diffusivity, 250; *Bushveld*, Mg-rich, comp., 245; *Gujana*, Zn-Cr, 127; *Japan*, comp., 323; *Norway*, Zn-, anal., opt., X-ray, 98; *Synnýr*, from skarn, opt., 330
pit-Gemer mts. v. *Czechoslovakia*
pitbergen v. *Arctic*
pitstop, *Transvaal* v. *South Africa*
podiosite, structure, 271
podumene, alpha-beta transition, 194; *Argentina*, 281; *Connecticut*, anal., opt., X-ray, 194; *India*, comp., 136; *North Carolina*, mine, 78; *South Dakota*, anal., opt., X-ray, 194
pores, *Hungary*, 80
porno mt. v. *Italy*
prings, *France*, saline, 280; *Tiberias lake*, comp., 297; v. also thermal springs
purrite, *Israel*, 245
redinny range, *Soviet Far East* v. *Russian SFSR*
taffordshire v. *England*
talactite, *Ariège*, 339; *Greece*, of sulphide & carbonate, 98; *Okinawa Jima*, speleothem, 339
tale v. *North Carolina*
tamford v. *Connecticut*
standard rocks, activation analysis, 198; comp., 290; Cu, Ga, Zn in, 86; Hg in, 123; In in, 86; minor elements in, 259; Si in, 207; Sr, Rb in, 259; trace elements in, 172; v. also under G-1, W-1, etc.
stannite, cation valencies, Mössbauer effect, 27; *Malaya*, reflectivity, X-ray, 141
— series, identification, 141
stanovoy range, *Siberia* v. *Russian SFSR*
stari Trg mine v. *Yugoslavia*
start, *Devon* v. *England*
stassfurt v. *Germany*
statistics, of orientation data, 79
staurolite, electron spectra of Fe, 93; Mössbauer effect, 177
steamboat springs v. *Nevada*
steens mt. v. *Oregon*
steep Rock lake, *Ontario* v. *Canada*
sterling hill v. *New Jersey*
Sternbergite, Mössbauer effect, 95
stibnite, identification, 259; *Turkey*, 100
stilbite, hydrothermal treatment, IR, d.t.a., 139; *Argentina*, altered to beidellite, opt., X-ray, d.t.a., 52; *Iceland*, structure, anal., 179; *Japan*, sodian, anal., opt., X-ray, IR, d.t.a., 139; *Lisbon*, in andesite, 148; *Lower Silesia*, from alteration zone, 320; *New Scotia*, anal., X-ray, 52
stillwater v. *Montana*
stillwellite, *Australia*, anal., 53; *USSR*, anal., opt., X-ray, 53
stilpnomelane, *Kiso*, co-existing with biotite in schist, opt., X-ray, 137; *Maine*, X-ray, 314; *Wittenoom gorge*, anal., 49
stishovite, thermal properties, stability, 107
stjerney v. *Norway*
STM-1, Cu, Ga, Zn in, 86
Stock, *Loro*, hornblendic gabbro, 232
Stollberg mine v. *Sweden*
Stolzite, *Massachusetts*, 163
Stone-casting, mineralogy, 9
Stora Sahavaara v. *Sweden*
Stranskite, structure, 271
Stratford v. *Connecticut*
Strato-volcano, *Montiferro*, 62
Strengite, *Hainault*, 224
Stress, in rocks, 84
Stromboli v. *Mediterranean Sea*
Stronalite, *Novara*, 332
Strontian chabazite, *Moravia*, anal., opt., X-ray, 52
Strontianite, identification, 259; IR absorption, 224
Strontium, abundance in Earth, 197; determination, 5, 86, 259; distribution coefficients in earth materials, 112; in carbonatitic baryte, 115; in differentiated igneous rocks, 292; in Earth's crust, 290; in Earth's mantle, 228; in fossil teeth & bones, 116; in metamorphism of granitoids, 199; in mollusc shells, 202; in plagioclase, 52; in sea-water, 204; in sôvites, alnoites, kimberlites, 115; IR absorption, 94; isotope dilution analysis, 255; *Africa*, in basalts, 148; *Alnö*, in carbonatite, 36; *Antarctica*, in lake water, 296; *Caspian plain*, in waters, salt lakes, 297; *Germany*, in baryte, 34, in sediments, 38; *Hungary*, in lignite, 295; *Kansas*, in carbonates, 290; *Marlsburg*, in granite pluton, 114; *Michigan*, in dolomite & calcite, 142; *Mozambique*, in feldspars, 220; *Norway*, in plagioclase, 219; *Oregon*, in tonalite, 236; *Ukraine*, in ground-waters near sulphur deposit, 119; *Volograd*, in evaporites, 117
— compounds: solubility product of sulphate, 24; synthesis of Sr-barylite, 109; synthesis, X-ray, of hydrogarnets, 109; transition in $ScCO_3$, 192
— isotopes, in alkaline rocks, 261; in carbonatites, kimberlites, 36; in eugeosynclinal sedimentary rocks, 238; in volcanic rocks from island arcs, 292; *Italy*, in potassic lavas, 292; *New Zealand*, in volcanic rocks, 325; *Queensland*, in tuff, 152; *United States*, in intrusive porphyries, 113
— minerals: *Dreislar*, sulphate in baryte veins, 34; *Erzgebirge*, sulphate in baryte deposits, 290
strunzite, *Hainault*, anal., opt., X-ray, 224
struvite, altered to newberryite, 313; decomposition, 192
subgreywacke, *Apennines*, heavy minerals in, 70; *Utah*, metamorphism, 155
sudan, *Khartoum*, Sn-W minerals, 18; *Khor Temiki*, meteorite, 210; *Kutum*, Pb-Zn ores, 21
sudbury, *Ontario* v. *Canada*
suduite, *Okayama*, dioctahedral, X-ray, d.t.a., 307
suez v. *Egypt*
suishoyama, *Honshu* v. *Japan*
sukula v. *Finland*
sukulaite, *Finland*, anal., X-ray, 127
sula mts v. *Sierra Leone*
sulitjelma v. *Norway*
sulphate minerals, bacterial reduction, 117; identification by thermal decomposition, 259; in sediments, S isotopes in, 203; IR spectra, 58; O, S isotopes in, 117; *Ciscaucasia*, O, S isotopes in, 41; *Germany*, S isotopes in, 297
sulphate rocks, *Thuringia*, *Muschelkalk*, 243
sulphide minerals, book, 6; crystallochemical peculiarities, 96; identification by thermal decomposition, 259; *Baltic basin*, isotopes in, 202; *California*, deposited from brine, 296; *Ciscaucasia*, S isotopes in, 41; *Idaho*, Ag in, 277; *Japan*, in metamorphic rocks, 141, S isotopes in, 33; *Lengenbach*, S, Pb isotopes in, 290; *Singhbhum*, trace elements in, 112
sulphide nodules, from meteorites, 301
sulphide ores, liquid immiscibility, 276; mobility of components, 186; oxidation under permafrost, 33; *Africa*, S isotopes in, 187; *Altai-Sayan*, Se, Te in, 183; *Appalachians*, 19; *Arizona*, oxidized zone, 21; *Carpathians*, 274; *Dzhedzakazan*, Re in, 187; *Illinois & Kentucky*, 272; *Kamchatka*, in biotite-amphibole-feldspar rock, 275; *Khuperi mt.*, 150; *Krivoy Rog*, Se in, 40; *New Brunswick*, origin, 98; *New South Wales*, metamorphosed, neomagmas, 273; *North America*, massive, 99; *North Carolina*, wall-rock alteration, 290; *Norway*, metamorphosed, 330; *Pechenga-Lotta*, 97; *Philippines*, pyrometasomatic, 274; *Poiana Rusca*, 183; *Rhodesia*, confining pressures, 222; *Sweden*, in leptite, 156; *Tessin*, geothermometry, 186; *Thunder Bay*, 159; *Urals*, concentrations in roof-rocks, 99; *Wakatipu*, 19
sulphides, high-temp. solution chemistry, 97; studies, 87
sulphites, bacterial reduction, 117
sulphoacid, structure, 104
sulphosalts, classification, 270; *Lengenbach*, S, Pb isotopes in, 290; *Sweden*, Bi-bearing, 143
sulphur, determination, 5; fugacity during metamorphism, 155; in crude oils, 206; in natural gas, 189; microbial cycle, 38; origin of deposits, 262; world resources, 22; *Illinois & Kentucky*, 272; *Kuriles-Kamchatka*, volcanic deposits, 240; *North Carolina*, in ore wall-rocks, 290; *Ukraine*, Sr in ground-waters, 119; *USSR*, crystal morphology, 249; *Uzbekistan*, crystal morphology, 139
— cycle, *Connecticut*, in lake waters, 118; *Israel*, 297
— isotopes, geochemistry, 290; in Sudbury-type ores, 275; in sulphates, sea-water, 117; in acid rocks & associated ores, 33; in eclogitic rocks, 39; in sedimentary sulphates, 203; variation throughout geological time, 38; *Africa*, in sulphides, sulphates, 187; *Australia*, in Pb-Zn ores, 291; *Baltic basin*, in sulphide minerals, 202; *Ciscaucasia*, in sulphates, sulphides in waters, 41; *Germany*, in ore minerals, 33, in waters, minerals, 297; *Italy*, in sphalerite, 273; *Japan*, in sulphide minerals, 33; *Kola*, in Cu-Ni ores, 291; *Lengenbach*, in sulphides, sulphosalts, 290; *Noril'sk*, in anhydrite, 203; *Peru*, in ores, 17
sultan basin v. *Washington*
summit quarry v. *New Jersey*
summitville v. *Colorado*
sunart, *Argyllshire* v. *Scotland*
sungei Lembing v. *Malaya*
superior, *Lake* v. *North America*
suresnes v. *France*
surigao, *Philippines* v. *East Indies*
surinam v. *Guiana*
surtsey v. *Iceland*
susamyr v. *USSR*
sussexite, optical absorption, 265
sutherland v. *Scotland*
svanbergite, *Gorny Altai*, anal., opt., X-ray, d.t.a., 58; *Transbaikal*, in altered wall-rocks, opt., X-ray, 313
swat, *West Pakistan* v. *Pakistan*
swaziland, Karroo basalts, 148

SWEDEN, age of magmatism, 166; age of peat bogs, 83; garnets, 216; holmquistites, 48; kimberlites, 228; ore Pb isotopes, 113; orthopyroxenes, 267; *Alnö*, age of alnöite dikes, sōvite pegmatites, 146; carbonatites, 62; pyroxenes, 47; Sr, Ba in carbonatites, 36; Sr, Ba in sōvites, kimberlites, carbonatites, 115; wollastonite in carbonatites, 145; *Åsby*, diabase, 146; *Ävike bay*, *Bohniān coast*, kimberlites, 147; *Bohus*, gravity survey of granite, 161; *Falun*, ore-deposits in leptite, 146; *Garberg*, granite, 146; *Gladhammar*, *Västervik*, Bi sulphosalts, 143; *Grängesberg*, *Dalarna*, ore deposits in leptite, 146; *Hälfors*, ore minerals, 100; *Harstig mine*, ganophyllite, 314; harstigite, 221; *Hummeln lake*, possible astrobleme, 126; *Kalbäckan*, *Falun*, sulphide ore, 156; *Kopparberg*, pre-Quaternary rocks, 146; *Långban*, barylite, 109, gabrielsonite, 128, joesmithite, 179, welinitite, 127, wickmanite, 127; *Norberg*, iron-sand in quartzite, 157; *Nordmark mines*, *Värmland*, berryite, 225; *Norra Kär*, alkaline body, gennite, 324; *Norrboten Co.*, kimberlite dykes in metamorphosed sediments, 246; *Öje*, diabase, 146; *Särna*, diabase, 146; *Sjöan lake*, limestones, shales, 146; *Skåne*, Tertiary basalts, 230; *Smedgården*, *Alnö*, wollastonite, calcite in sōvite, 145; *Stöllberg mine*, *Väster-Silberg*, carbonates, 143; *Stora Sahavaara*, *Kaunisaara*, Fe sulphide ores, 101; *Värmland*, granites, porphyries, 146; *Västervik*, Precambrian metasedimentary rocks, 155, Precambrian sedimentary structures, 155

Świetla Anna mt. v. Poland

Swift river v. Maine

Switzerland, *North Carolina*, anal., X-ray, 314

SWITZERLAND, geological guide, 173; *Aar*, granitic complex, 231, migmatite, gneiss, 247, petrofabrics of crystalline rocks, 237; structure of massif, 237; *Alps*, heavy minerals in flysch, 154, minerals, 173, U, Th, trace elements in gneisses, 18; *Bellinzona*, garnet peridotite, eclogite, 318; *Bergell*, *Grisons*, anorthite in marble inclusion, 51, intrusive rocks, 231; *Bex*, *Vaud*, salt mine, 188; *Binnenthal (Binatal)*, hyalophane, 309, marrite, 270; *Calanda*, *Graubünden*, Au-calcite veins, 337; *Chamossier*, *Valais*, Fe ores, 242; *Felsberg*, *Graubünden*, pillow-lava, 231; *Ferrera tunnel*, *Graubünden*, U in ore minerals, 185; *Gotthard (St. Gotthard)*, hematite, 160, inclusions in vein minerals, 220, petrofabrics of crystalline rocks, 237; *Grande-Dixence*, *Wallis*, schists, 332; *Greina mts.*, regional geology, metamorphism, 247; *Isérables*, *Wallis*, U minerals, 185; *Lauterbrunnen*, *Bernese Oberland*, granite, 324; *Lengenbach*, *Binnatal*, imhoffite, 126, isotopes in sulphides, sulphosalts, 290, liquid inclusions in quartz, 220, wallisite, 126; *Le Pontine Alps*, basic plagioclase, 51; *Locarno*, *Tessin*, brannerite, vein minerals, 223; *Naters*, *Wallis*, metamorphic rocks, 247, U minerals, 185; *Puntiglias*, *Aar*, U, Th, K in granite, 293; *Rossbodenalpeli*, *Andermatt*, U in pegmatites, 185; *Tavetscher-Zwischen*, petrofabrics of crystalline rocks, 237; *Tessin*, K-feldspars from gneisses, 51, pegmatitic K-feldspars, 51, polymetallic ores, 186; *Val Boschetto*, *Tessin*, Ni, opaque minerals in serpentinite, 24; *Venoge valley*, attapulgite, 264; *Zermatt*, *Valais*, garnet in calc-mica schist, 133, ophiolites, 231

Sydney, *New South Wales v. Australia*

Syenite, comagmatic with gabbro, 326; layering, 173; *Aar*, comp., 247; *Congo*, albite, metasomatic, 325; *Japan*, metasomatic, 135; *Koryak mts.*, comp., 233; *Minas Gerais*, 236; *Richtersveld*, 236; *Scotland*, feldspars in, 147; *Ulkan*, Zr in, 200; *United States*, age, 256; *Urals*, age, 3—, biotite-hornblende, *Czechoslovakia*, 318—, nepheline, Nb, Ta in, 35; *Baikal*, apatite in, 321; *Dalarna*, with cancrinite, 146; *Ditráu*, use in ceramic industry, 189; *Kola*, genesis, 239; *Malawi*, comp., 234; *Synnýr*, with skarn contact, 330; *USSR*, comp. of nepheline-feldspar mixtures, 283—, riebeckite. *Andhra Pradesh*, comp., 48

Syenite rock-1, rare-earths in, 5

Syenitic magma, crystallization of feldspar, 50

Syenodiorite, *Karamazov*, In, Tl in, 200; *Koryak mts.*, comp., 233

Sylvanite, X-ray, 104; *Philippines*, 278; *Virginia*, 79

Sylvite, *Alsace*, 280; *Upper Kama*, 23

Symplectite, *Japan*, pyroxene-spinel, 322

Synchysite, *Malawi*, opt., 235

Syngenite, structure, 270

Synnýr, *Siberia v. Russian SFSR*

SYRIA, phosphates, 188

System:

- $\text{Ag}_3\text{AuS}_2\text{-Ag}_2\text{S}$, 285
- Al_2O_3 , 7
- $\alpha\text{-Al}_2\text{O}_3\text{-Cr}_2\text{O}_3$, 25
- $\text{Al}_2\text{O}_3\text{-H}_2\text{O}$, 28, 286
- $\text{Al}_2\text{O}_3\text{-SiO}_2$, 28
- $\text{Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 28, 286
- Au-Ag-Te , 104
- $\text{BaO-Al}_2\text{O}_3\text{-SiO}_2$, 288
- $\text{BaO-SiO}_2\text{-GeO}_2$, 8
- $\text{CaAl}_2\text{Si}_2\text{O}_5\text{-SiO}_2\text{-H}_2\text{O}$, 29
- $\text{CaCO}_3\text{-MgCO}_3\text{-FeCO}_3$, 27
- $\text{CaCO}_3\text{-MgCO}_3\text{-MnCO}_3$, 312
- $\text{CaO-Al}_2\text{O}_3$, 106
- $\text{CaO-Al}_2\text{O}_3\text{-CaSO}_4\text{-H}_2\text{O}$, 8
- $\text{CaO-Al}_2\text{O}_3\text{-CaSO}_4\text{-SiO}_2\text{-H}_2\text{O}$, 8
- $\text{CaO-Al}_2\text{O}_3\text{-Fe}_2\text{O}_3$, 89
- $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2$, 24
- CaO-BaO-SiO_2 , 89
- $\text{CaO-CO}_2\text{-H}_2\text{O}$, 62, 107
- $\text{CaO-CaF}_2\text{-2CaO-SiO}_2$, 194
- $\text{CaO-CaF}_2\text{-P}_2\text{O}_5\text{-CO}_2\text{-H}_2\text{O}$, 25
- $\text{CaO-Fe-O-SiO}_2\text{-H}_2\text{O}$, 217
- $\text{CaO-Fe-O-SiO}_2\text{-H}_2\text{O-CO}_2$, 217
- $\text{CaO-Fe}_2\text{O}_3\text{-Al}_2\text{O}_3\text{-CaSO}_4\text{-H}_2\text{O}$, 8
- $\text{CaO-Mg-Al}_2\text{O}_3\text{-SiO}_2$, 9, 153
- $\text{CaO-Mg-CO}_2\text{-H}_2\text{O}$, 25, 142
- $\text{CaO-Mg-Fe-O-H}_2\text{O}$, 25
- CaO-Mg-SiO_2 , 24
- $\text{CaO-Mg-SiO}_2\text{-CO}_2\text{-H}_2\text{O}$, 228
- $\text{CaO-Mg-SiO}_2\text{+(R}_2\text{O; R}_2\text{O}_3)$, 8, 9
- $\text{CaO-SiO}_2\text{-H}_2\text{O}$, 8
- $\text{Ca(OH)}_2\text{-CaF}_2\text{-Ca}_3\text{(PO}_4)_2\text{-H}_2\text{O}$, 25
- $\text{Cr}_2\text{O}_3\text{-Fe}_2\text{O}_3$, 252
- Cu-Fe-Ge-S , 191
- Cu-Fe-S , 106, 141
- Cu-Pb-S , 285
- Cu-S , 28
- $\text{Fe-CO}_2\text{-S}$, 204
- Fe-Cu-S , 204
- Fe-Ni-C , 302
- Fe-Ni-S , 285
- Fe-Pb-S , 285
- Fe-S , 99
- Fe-S-O , 99
- Fe-Ta-O , 191
- $\text{FeO-Fe}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$, 29
- FeO-MnO , 24
- FeS-S_2 , 284
- $\text{FeSiO}_3\text{-MgSiO}_3$, 24
- $\text{FeSiO}_3\text{-MnSiO}_3$, 24
- $\text{Fe}_2\text{O}_3\text{-Mn}_2\text{O}_3$ (air), 20
- $\text{Fe}_2\text{SiO}_4\text{-Mn}_2\text{SiO}_4$, 24
- $\text{Fe}_2\text{O-MgO}$, 192
- $\text{KAlSiO}_4\text{-MgSiO}_4\text{-SiO}_2\text{-H}_2\text{O}$, 48
- $\text{KAlSiO}_4\text{-NaAlSiO}_4\text{-SiO}_2$, 288
- $\text{KAlSiO}_8\text{-BaAl}_2\text{Si}_2\text{O}_8$, 309
- $\text{KAlSi}_3\text{O}_8\text{-NaAlSi}_3\text{O}_8\text{-SiO}_2\text{-H}_2\text{O}$, 324
- $\text{K}_2\text{SO}_4\text{-H}_2\text{O}$, 191
- $\text{La}_2\text{O}_3\text{-MgO}$, 8
- $\text{Li}_2\text{SiO}_4\text{-H}_2\text{O}$, 191
- $\text{MgCl}_2\text{-MgSO}_4\text{-H}_2\text{O}$, 106
- $\text{MgCO}_3\text{-CaCO}_3\text{-CaSO}_4\text{-CaCl}_2\text{-MgCl}_2\text{-MgSO}_4$, 9
- $\text{MgGeO}_3\text{-MgSiO}_3$, 287
- $\text{MgO-CaO-Fe}_2\text{O}_3\text{(FeO)-SiO}_2$, 8
- $\text{MgO-FeO-Fe}_2\text{O}_3$, 192
- $\text{MgO-FeO-Fe}_2\text{O}_3\text{-SiO}_2$, 109
- MgO-Fe-O-SiO_2 , 24, 110
- $\text{MgO-MgSiO}_4\text{-MgAl}_2\text{O}_4$, 193
- MgO-SiO_2 , 194, 196
- $\text{MgO-SiO}_2\text{-CO}_2\text{-H}_2\text{O}$, 194
- $\text{MgO-SiO}_2\text{-H}_2\text{O}$, 29, 307
- $\text{MgO-SiO}_2\text{-H}_2\text{O-CO}_2$, 87
- $\text{MgSiO}_3\text{-CaSiO}_3\text{-Al}_2\text{O}_3$, 195
- $\text{Mg}_2\text{SiO}_4\text{-Fe}_2\text{SiO}_4$, 194, 339
- $\text{Mg}_2\text{SiO}_4\text{-SiO}_2\text{-CaAl}_2\text{O}_4$, 194
- $\text{Mg}_2\text{SiO}_4\text{-SiO}_2\text{-CaMgSiO}_4$, 194
- $\text{Mg}_2\text{SiO}_4\text{-SiO}_2\text{-MgAl}_2\text{O}_4$, 194
- $\text{Mg}_2\text{SiO}_4\text{-SiO}_2\text{-NaAlSiO}_4$, 194
- $\text{MnO-O-H}_2\text{O}$, 266
- Mo-V-O , 191
- $\text{NaAlSiO}_4\text{-SiO}_2\text{-H}_2\text{O}$, 195
- $\text{NaAlSi}_3\text{O}_8\text{-LiAlSiO}_4\text{-H}_2\text{O}$, 29
- $\text{Na}_3\text{AlF}_6\text{-NaAlSiO}_4$, 193
- $\text{Na}_3\text{AlF}_6\text{-Na}_2\text{SiO}_3$, 193
- NaCl-KCl , 284
- $\text{Na}_2\text{CO}_3\text{-H}_2\text{O}$, 191
- $\text{Na}_2\text{O-Al}_2\text{O}_3\text{-H}_2\text{O}$, 9
- $\text{Na}_2\text{O-Al}_2\text{O}_3\text{-2SiO}_2$, 288
- $\text{Na}_2\text{SO}_4\text{-H}_2\text{O}$, 191
- Ni-Mg-Si-O , 286
- $\text{PbO-Fe}_2\text{O}_3\text{-SiO}_2$, 108
- $\text{PbS-Bi}_2\text{S}_3$, 314
- $\text{SbBr}_3\text{-Sb}_2\text{O}_3\text{-HBr-H}_2\text{O}$, 106
- $\text{SbCl}_3\text{-Sb}_2\text{O}_3\text{-HCl-H}_2\text{O}$, 106
- $\text{Sc}_2\text{O}_3\text{-MgO}$, 8
- $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-Ca-O-R}_2\text{O}_y$, 8
- $\text{SiO}_2\text{-alkali}$, 89
- $\text{SiO}_2\text{-H}_2\text{O}$, 28
- $\text{SiO}_2\text{-NaAlSiO}_4\text{-KAlSiO}_4$, 236
- $\text{SiO}_2\text{-NaOH-Fe-H}_2\text{O}$, 288
- U-CO_2 , 204
- $\text{U}_2\text{O}_8\text{-Nb}_2\text{O}_5$, 26
- $\text{Y}_2\text{O}_3\text{-CaO}$, 8
- $\text{Y}_2\text{O}_3\text{-MgO}$, 8
- Zn-Fe-S , 140
- $\text{Zn}_2\text{SiO}_4\text{-Fe}_2\text{SiO}_4$, 9
- $\text{ZrO}_2\text{-SiO}_2$, 28
- Ab-Or , 284
- albite-nepheline-acmite-diopside- H_2O , andradite-kimzeyite-schorlomite, 29
- arsenite-antimony, 284
- copper sulphide-copper oxide, 290
- diopside-acmite-augite, 239
- diopside-anorthite, 152
- diopside-hedenbergite-aegirine, 134
- diopside-pyrope, 30
- iron sulphide-iron oxide, 290
- kaolinite-water, 190
- magnetite-fluorapatite, 284
- monticellite-spinel, 89
- montmorillonite-water, 190
- muscovite-paragonite, 284
- nepheline-alkali feldspar-plagioclase, 28
- Q-Ab-Or-An, 315
- Q-Ab-Or- H_2O , 315
- Q-Or-Ab, 68
- Q-Or-Ab-An- H_2O , 151
- strontianite-aragonite, 142
- sulphate-sulphide, 290

stems, multi-component, 334; ternary, of silicates, 24
silolnokite series, 131

1, Al, Fe in, 85; Mg in, 5; P in, 172; Sb in, 259; V in, 85
affeite, 31; *Ceylon*, 196
tal, *Philippines v. East Indies*
bahir, *Burma*, 196
Dzhirk SSR, *Alai mts.*, stillwellite, 53; *Dzhel'gutan*, *Chaltash*, supergene hydrozincite, 312; *Gissar range*, orthoclase in fluorite deposit, 198; *Hissar* [*Gissar?*], Sc in granitoids, 35; *Karamazar*, In, Tl in ores, 199; *Karategine*, *Tien-Shan*, fluorite veins in granite, 156; *Kuli-Kolon*, potassium allardite, 179; *Kurusay*, skarn-polymetallic ores, 47; *Mul'vodzha*, *Pamirs*, enstatite, 46; *Pamirs*, albite granite, granophyre, 320
vezhny, *Siberia v. Russian SFSR*
ague river v. *Portugal*
aihi v. *Pacific Ocean*
ajii, *Honshu v. Japan*
aimyr (*Taymyr*), *Siberia v. Russian SFSR*
aiwan (FORMOSA), volcanism as source of sulphides, 17, 182
akachiso, *Kyushu v. Japan*
akahi mine, *Honshu v. Japan*
akaiwa mine, *Shikoku v. Japan*
akhtarumchorr mt. v. *Russian SFSR*
akozu, *Honshu v. Japan*
alc, electron bombardment, 288; glow curve, 89; IR spectra, 266; *Aar*, 247; *Algeria*, anal., 18; *Japan*, IR absorption, 90; Pyrenees, formation temp. of deposits, 330; *Silesia*, from alteration zone, 320; *Styria*, pyrite in, 57; *USSR*, comp., d.t.a., dehydration, 307
- group, nomenclature, 48
alnakh, *Siberia v. Russian SFSR*
al-ridong v. *Korea*
amar valley, *Tasmania v. Australia*
ampere v. *Finland*
antalite, book, 6
antalite, *Congo & Rwanda*, in pegmatite, comp., X-ray, 322
antatum, determination, 171, 198; in granitoid micas, 49; in muscovites from pegmatites, 35; in nepheline syenites, 35; *Transbaikal*, in wolframite, 224
compounds: phase relations of Fe-Ta oxides, 191; synthesis of Ta-Ba oxide, 16
anzania (TANGANYIKA), heavy minerals in sands, 244; *Gerevi hills*, blue zoisite, 196; *Handeni*, sinhalite, skarn minerals, 144; *Kapalagulu*, layered basic rocks, 173; *Kwemahambalwe*, topaz-sillimanite-kyanite rocks, 45; *Morogoro*, pitchblende, 198; *Olduvai gorge*, dawsonite, 224
apalite, comp., opt., X-ray, IR, 312; *Ukraine*, in pegmatite, anal., opt., X-ray, 142
carbitte, structure, 16; X-ray, 180
pari, *Honshu v. Japan*
taro valley v. *Italy*
tasmania v. *Australia*
tatar, *Siberia v. Russian SFSR*
tatars v. *Russian SFSR*
tatra mts. v. *Poland*
taupo, *North Island v. New Zealand*
taurus mts. v. *Turkey*
tavetscher-zwischen v. *Switzerland*
taygones peninsula, *Soviet Far East v. Russian SFSR*
taymyr, *Siberia v. Russian SFSR*
tblisi v. *Georgian SSR*
teallite, identification, 141

Tectonics, fluting structure, 67; geophysical study, 229; *India*, 80; *Newfoundland*, of submarine bed-rock, 80
Tectonics & magma, book, 229
Teeth, Sr in, 116
Teigarhorn v. *Iceland*
Tekrites, 42, 120, 207, 298; Au, Ir, Pt in, 43; compositional trends, 214; devitrification of glass, 44; elastic properties, 214; meteoritic spherules in glass, 44; multivariate analysis of geochemical data, 44; origin, 213, 298, 300; origin of sculpturing, 126; Sb in, 207; *Bohemia*, sedimentary units, 44; *Georgia*, comp., 44, 214; *Ivory Coast*, Ba, rare-earths in, 214; *North America*, comp., 303; *Texas*, factor analysis of constituents, 44; v. also australites; indochinites; moldavites

Telemark v. *Norway*
Tell Setifian v. *Algeria*
Telluride minerals, *Philippines*, 278
Tellurides, book, 6
Tellurite, structure, 269
Tellurium, in meteorites, 122, 208; *Altai-Sayan*, in sulphide ores, 183
— mineral: unnamed, structure, 180; *Izu peninsula*, in epithermal ores, 99
Tem Piute v. *Nevada*
Templstejn v. *Czechoslovakia*
Tenerife v. *Atlantic Ocean*
TENNESSEE, Zn ores, 98; *Dale Hollow lake*, *Cumberland Co.*, geodes, minerals, 78; *Jefferson City*, Zn ores, 184; *Mascot*, Zn ores, 184
Tephra, *Iceland*, comp., 153
Tephrite, leucite, anal., 320; *Cantal*, haüyne, 318
Tephroite, free energy of formation, 24; optical absorption, 265
Ternary systems, topology of phase diagrams, 284
Téron gorge v. *France*
Terskey v. *USSR*
Teschenite, *Ayrshire*, crystallization of sill, 236
Tessin v. *Switzerland*
Tetradymite, *China*, 163; *Izu peninsula*, 99
Tetrahedrite, *Gorny Altai*, as source of secondary cinnabar, X-ray, 100
Teutschmitz v. *Germany*
TEXAS, anaerobic oxidation of hydrocarbons, 206; Pb in igneous rocks, 34; tektites, 44
THAILAND, fluorite deposits, 280; *Ban Mae Jong*, Mn ores, 280; *Ban Sam Sui*, fluorite, 280; *Khan Ploi Waeng*, sapphire, 311
Thalénite, *Fukushima*, anal., opt., X-ray, 133
Thallium, in potash deposits, 294; *Crimean mts.*, in rocks, 115; *Georgian SSR*, in granitoid rocks, 199; *Karamazar*, in ore-region, 199; *Kazakhstan*, in granitoids, 7
Thanksgiving mine, *Philippines v. East Indies*
Thaumasite, *Bulgaria*, X-ray, IR, 310
Thermal, differential analysis, interpretation of results, 10
Thermal activity, *Antarctica*, 69
Thermal diffusivity, of rock-forming minerals, 250
Thermal expansion, of limestones, dolomites, 250
Thermal resistance, *Caucasus*, of rocks, 336
Thermal springs, *Japan*, comp., 119; *Natal*, 205; *Yellowstone Park*, rock alteration, 296; v. also waters, thermal
Thermodynamics, of simple solutions, 87
Thermo-electromotive force effect, 161
Thermofluorescence, of quartz, 336; *Balkash*, of quartzite, 336
Thermoluminescence, of fossil shells, 83; of geological materials, book, 261; of plagioclase, 76; *India*, of smoky quartz, 2

Thingmuli v. *Iceland*
Thioneobates, of transition metals, 182
Thioneite, definition, 58; K, Rb in, 292; melting & phase relations, 287; quartz, melting & crystallization, 287; *Durham*, 147; *Iceland*, liquidus temp., 311
Thomsenolite, *Greenland*, structure, 269
Thomsonite-type mineral, *New South Wales*, comp., 64
Thorbastnásite, IR absorption, 16
Thoreaulite, identification, 141; structure, 15
Thorianite, *Enisei*, in apatite-pyroxene rocks, comp., X-ray, 55
Thorite, *Haute-Savoie*, in sands, 70; *Kazakhstan*, Sc in, 53
Thorium, determination, 6, 117; in hydrothermal solutions, 198; in micas, 218; in monazite, 97; in potassio alkaline rocks, 36; in progressive metamorphism & ultra-metamorphism, 296; in zircons, 132; *Aar*, in granite, 293; *Alps*, in gneiss, 18; *Arizona*, in altered Cu ores, 98; *Caucasus*, in acid intrusions, 7, in carbonatite rocks, 202; *Quebec*, in shield rocks, 115; *Soviet Central Asia*, in sands, 293
— compounds: synthesis of oxide, 26
— isotopes, in river waters, sediments, 297; *Mississippi river*, in sediments, 201
— minerals, glossary, 145; *Rwanda & Congo*, in pegmatite, 322
— ores, autoradiography, 260; *Brazil*, 185
Thoro-aeschynite, *Vishnevye mts.*, anal., opt., d.t.a., 130
Thucholite, biochemistry, 203; with biogenetic structures, 185
Thuringia v. *Germany*
Tiberias lake v. *Israel*
Tien-Shan v. *Kirghizian SSR*; *USSR*
Tienshanite, *Tien-Shan*, anal., opt., X-ray, 226
Tigerek, *Siberia v. Russian SFSR*
Tillite, *Congo*, 155
Tilloid, *Spitsbergen*, 329
Tilly Foster mine v. *New York*
Timbarba v. *Brazil*
Timok v. *Yugoslavia*
Timor Sea v. *Australia*
Tin, determination, 259; in G-1, 198; offshore prospecting, 187; transported in hydrothermal solutions, 20, 105; *Cornwall*, in greisens & granitic rocks, 188; *Rhodesia*, in pegmatites, 276
Tincalayu mine v. *Argentina*
Tinguaite, *India*, comp., 236; *Sweden*, dykes, 146
Tin minerals, identification, 141; *Malaya*, reflectivity, X-ray, 141
Tin ores, belts on continents, 276; mineral processing, 187; principal lode deposits, 188; related to granitic rocks, 187; *Alaska*, trace elements in, 298; *Amazonia*, in greisens, granites, 188; *Bohemian massif*, endogenous, 188; *Bolivia*, mining industry, 187; *Ebor*, Sn-Zn-Pb ores, 276; *Erzgebirge*, Sn-W ores, 276; *Indonesia*, 276; *Malaysia & Cornwall*, development of lodes, 187; *Rwanda*, 188; *Soviet Far East*, biogeochemistry, 206, formed from alkaline solutions, 20; *Sudan*, Sn-W ores, 81
Tisné point v. *Antarctica*
Titanautes, book, 6; energy characteristics, 25
Titanaugite, *Quebec*, comp., opt., 46
Titanium, determination, 5, 85, 86, 171, 172; in differentiation of basaltic magma, 229; in minerals of ultramafic rocks, 114; in plagioclase, 52; in pyroxenes from trap-rocks, 46; in titanomagnetites, ilmenites, 223; *Africa*, in basalts, 148; *Colorado*, in

Titanium, (contd.)
 pyroxenite, 96; *Faroes*, in basaltic lava, 316; *Kazakhstan*, in quartz, 138; *Marlborough*, in granite pluton, 114; *Norway*, in magnetite-ilmenite ores, 59; *Oregon*, in tonalite, 236
 — compounds: structure defects in oxides, 24; structure of TiO_2 -II, 269; synthesis of Mn-Ti spinels, 191; synthetic garnets, 29
 — minerals: stability relations, 105; transformation of oxide, 191
 Titanomagnetite, from volcanic rocks, anal., 223; in basalts, comp., 223; magnetism, 162; Ti, Mn, Fe, Cr in, 223; *Hocheifel*, in trachyte, 217; *Siberia*, anal., 215, in ijolite-melteigite, 68; *Urals*, in metamorphic Fe ores, 74
 — series, synthesis, X-ray, 284
Thuzsuz v. Poland
Tobermorite, Israel, 245
Todorokite, comp., 141; *Aomori*, anal., X-ray, d.t.a., 56; *Ariège*, comp., opt., X-ray, d.t.a., t.g.a., 312; *Australia*, in altered basalt, anal., 223; *Iwasaki*, anal., X-ray, d.t.a., 56; *Nevada*, argentinian, anal., X-ray, 126; *Philippines*, 279
Tot mine, Honshu v. Japan
Tokuj v. Hungary
Tomii mine, Honshu v. Japan
Tomiko mine, Honshu v. Japan
 Tonalite, *Oregon*, stock, comp., 236; *Rhodesia*, with Ni-Cu ores, 186; *Zarow*, comp., 63
Tonezza v. Italy
Tonstein, Colombia, 93; *Germany*, comp., X-ray, d.t.a., 154; *Queensland*, in coal, anal., 11; *Staffordshire*, comp., 11; v. also claystone
Topar v. Kazakh SSR
Topaz, IR, 336; opt., X-ray, 216; *Azov*, Ga in, 200; *Tanganyika*, coexisting with sillimanite, opt., X-ray, 45
Topazfels, sillimanite-kyanite, *Tanganyika*, 45
 Topographical mineralogy, 77, 162, 252, 337; *Bohemia*, 252
Toquima mts. v. Nevada
Torbernite, Turkey, 273
Torv Gletscher v. Greenland
Toumodi v. Ivory Coast
 Tourmaline, crystal growth, 109; *Bavaria*, habit, comp., 216; *Connemara*, anal., opt., 134; *Urals*, Sc in, 114; v. also dravite — rocks, *Sudetes*, 72
Tourmalinite, Côte d'Or, 331; *Sardinia*, rare-earths in, 198
Towada, Honshu v. Japan
 Trace (minor) elements, as depth indicators in sediments, 201; determination, 172, 259; determination in sea-water, 171; during thermal metamorphism & granitization, 39; estimation with laser microprobe, 260; in crude oils, 206; in interstitial waters of marine sediments, 204; in iron meteorites, 211; in ultramafic rocks, 228; related to nutrition, 206; solid source spark mass spectrography, 87; zones in ore-bodies, 112; *Alaska*, around Sn-W-Be ores, 298; *Arctic*, in lakes, 297; *Bay of Biscay*, in mud, 37; *Hungary*, in bauxite, 295, in lignite, 295; *Kursk*, in siliceous iron formation, 294; *Norway*, in garnets, 45; *Oklahoma*, in carbonate rocks, 202; *Saar-Nahe-Senke*, in sedimentary rocks, 37
Trachyandesite, geosynclinal, 320; *Antarctica*, glassy, 69; *Halle*, 233; *Koryak mts.*, comp., 233; *Serbia*, 319; *Turkey*, 322; *Turkmenia*, 149; *Wyoming*, 323
Trachybasalt, anal., 320; *Etna*, comp., 61, tephritic, 318; *Israel*, comp., 156
Trachydacite, Turkey, 322
Trachydolerite, Kharayelakh mts., 150
Trachyte, Azores, 326; *Carpathians*, 319; *France*, 318, comp., 317; *Hocheifel*, analcite, 217; *Israel*, comp., 156; *Koryak mts.*, comp., 233; *New South Wales*, comp., 218
Tracy mine v. Michigan
Transbaikal, Siberia v. Russian SFSR
 Transition metals, geochemistry, 87; structures of chalcogenides, 178; thioniobates, 182
Transkei, Cape Province v. South Africa
Transvaal v. South Africa
Transvaal jade v. hydrogrossular
 Trap-rocks, extrusive & intrusive, 315; petrochemistry, 315; *Kharayelakh mts.*, trace elements in, 114; *Kuzbas*, with xenoliths, comp., 320; *Lower Tunguska*, differentiated sill, 233, V, Cr, Co, Ni, Cu in, 234; *Mysore*, comp., 150; *Siberia*, 149, classification, 145, pyroxenes in, 217, rare-earth in, 35, subalkaline, 150, thermal studies, 229
Trattenbach v. Austria
Treamble, Cornwall v. England
 Tree rings, radiocarbon in, 164
Tremolite, Mn ion in, 14; *Banat*, X-ray, 245; *Lower Silesia*, in alteration zone, 320; *Siberia*, anal., opt., 215
 — actinolite series, crystal-field phenomena, 177; *Yakutia*, comp., opt., 305
 — ferroactinolite series, 110
Trial Harbour, Tasmania v. Australia
 Triassic rocks, *Poland*, 92
Triodynamicite, far IR spectrum, 76; thermal stability, 107, 286
Trinidad lake v. West Indies
Trinity Center v. California
 Tritium, in meteorites, 212
Troctolite, Norway, corona structures, 59; *Queensland*, comp., 64
Troilite, from chondrites, 299; Mössbauer spectra, 16
Troms v. Norway
Troodos v. Cyprus
Trout peak v. Wyoming
Trucial coast v. Arabia
Trumbull v. Connecticut
Truscottite, Shizuoka, anal., X-ray, 310
Trzebiotka mine v. Poland
Tschermigite (ammonium alum), *Argentina*, anal., opt., X-ray, d.t.a., IR, 56
Tsuchiya-Ishizaki mine, Hokkaido v. Japan
Tsuge, Honshu v. Japan
Tsumeb mine, South-West Africa v. South Africa
Tsumebite, structure, 94
Tuff, devitrified, comp., d.t.a., t.g.a., 176; IR reflectance spectra, 76; trace elements in, 292; *Antarctica*, 323; *Carpathians*, hydrothermal alteration, 176; *Colorado*, ash-flow, 323; *Germany*, 319; *Gun'ma*, altered, with zeolites, 139, diagenetic alteration, 137; *Israel*, argillation products, 12, welded ash-flow, 69; *Mont-Dore*, vitric, 147; *Nevada*, shear strength, 160; *New Mexico*, comp., 65; *Oklahoma*, andesitic, 65; *Queensland*, welded, 152, 323; *Spitsbergen*, 329; *Urals*, comp., 155; *Vosges*, comp., 317; *Washington*, 151
Tuffaceous rock, Poland, 243
Tuffsite, Ardnamurchan, 147; *Rhum*, explosion, 230
Tuffite, trace elements in, 292; *Poland*, with halite cement, 63; *Umbria*, comp., 232, origin, 61
Tundulu v. Malawi
 Tungsten, determination, 171; in G-I, 198
 — transport as halogen compounds, 20
 — compounds: phase composition in oxide 9; stability of halogen compounds, 20
 — minerals, *Pakistan*, 101
 — ores, chlorination, 103; *Alaska*, trace elements in, 298; *Idaho*, Ag in, 277; *Morocco*, W-Cu-Ag ores, Be in 277; *Nevada*, W-Cu-Ag ores, 277
TUNISIA, minerals in saliferous formation, 154
Turbidite, experimental lamination, 69
Turbidity currents, 240
Turyi peninsula v. Russian SFSR
Turkestan-Alaïsk v. USSR
TURKEY, glaucophane rocks, 158; *Anatolia*, age of rocks, 166; lawsonite-glaucophane facies rocks, 158; *Asmaca*, *Taurus*, bauxites, 281; *Bodrum peninsula*, trachydacites, trachyandesites, shonkinite, 322; *Demirtepe-Cavdar*, *Anatolia*, U ore minerals, 273; *Djebel Ank*, oolitic Fe ore, 278; *Erzincan*, Cr-chlorite, 268; *Maden-Ergani*, antlerite, chalcocite, 78; *Magara*, spilite, 281; *Menderes*, *Mildi*, garnet, 215; *Mihalıççık*, glaucophane-lawsonite schists, 158, igneous & metamorphic rocks, 322; *Nigde*, scheelite, pyrite, stibnite, cinnabar, 100; *Osmancık-Kısır*, U ore minerals, 273; *Özyaka*, *Mugla*, silicified diabase, 281; *Paya*, *Anatolia*, bauxitic Fe ore, 281; *Taurus mts.*, bauxite, volcanic rocks, 281, metamorphism, magmatism, ores, 272; *Yaylalar*, albitized diabase, bauxite, 281; *Zamanti*, *Kayseri*, Pb-Zn minerals, 273
TURKMENIAN SSR, *Ala-Eker range*, Pb-Zn baryte minerals, 149; *Badkhyz*, basaltic rocks, 149; *Kara-Kum*, reflectance of sands, 161; *Kopet Dagh range*, Pb-Zn baryte minerals, 149
Tusby v. Finland
Tuscany v. Italy
Tutonchana basin, Siberia v. Russian SFSR
Tuva, Siberia v. Russian SFSR
Tvedstrand v. Norway
 Twinning, in deformed diopside, 24; kinetics of growth, 249; of aragonite, 334; of plagioclase feldspars, 51; in synthetic quartz, 104
Twin Sisters v. Washington
Tyrnyauz v. Russian SFSR
Tyrrhenian Sea v. Italy
Uchalinsk v. Russian SFSR
Udias v. Spain
Udokansk, Siberia v. Russian SFSR
Ufaleyka river v. Russian SFSR
UGANDA, geophysical survey for minerals, 164; *Bukusu*, calzirtite, 224; *Elgon*, lava, 64; *Fort Portal*, carbonatitic lavas, 148; *Karamajo*, orogenic belts, 246, retrogressive metamorphism in granulites, 74; *Katwe-Kikoronge*, carbonatitic lavas, 148; *Yelele*, lavas, 64
Ugandite, Sacramento, age, 167
UKRAINIAN SSR, andalusite in shield rocks, 303; pyroxenes in charnockitic rocks, 45; apatite, 142; zircons in shield rocks, 45; *Azov*, clinohumite, 303, Ga in granitoids, 200, Pb isotopes in galena, 33; *Beregovaya*, vivianite, 313; *Bol'she-Tokmak*, Mn ore, 280; *Bug river*, charnockite pyroxene, 305; *Ciscarpathians*, sulphur, 249; *Dnieper (Dnepr)*, rare-earths in accessory minerals, 198; sillimanite, 133; *Dnieper*, *Donets basin*, Ar in ground-waters, 205; *Dniester*, age of palaeolithic encampments

UKRAINIAN SSR, (contd.)

82; charnockite pyroxenes, 305; fluorite, 144; *Donets basin* (*Donbas*), B in rocks, 293; B minerals, ulexite, 56; geologic evolution, metallogeny, 183; magmatic rocks, 115; wares from silicate melts, 9; *Druzhkorka-Konstantinovka*, hydrothermal bitumens, 291; *Khlebodarovka*, *Azov*, kaersutite in lamprophyre, 306; *Krivoy Rog*, Se in metamorphic rocks, 40; *Nikitovka*, Hg vapour at ore-field, 298; *Nikopol*, manganapite, 313; *Oktiabr'skiy*, eclogite xenoliths in lamprophyre, 149; *Petrovka*, *Azov*, corundum plagioclase, 233; *Pokrovo-Kireev*, moissanite, 64; *Rozdol*, Sr in ground-waters, 119; voltaite, 162; *Sasyk-Sivash*, trace elements & evaporation of water, 40; *Volhynia*, hydromica, 136; *Volodar'*, olivine-magnetite rocks, ores, 187

*Ukrainka v. Russian SFSR*Ulexite, *Donets basin*, formula, 56*Ulkansk, Siberia v. Russian SFSR**Ullmannite, Argentina*, 274

Ultrabasic rocks, chemical weathering in humid zone, 200; Cu-Ni mineralization of intrusions, 307; garnetiferous, 228; layered, 173; mineral facies, 227; mineral parageneses, 228; petrochemical classification, 318; petrofossils of olivine, orthopyroxene in massif, 67; *Caucasus*, Sc in, 200; *Enisei*, 150; *Japan*, inclusions in basalts, comp., 322; *Kola*, genesis, 239; *Lower Silesia*, leucocratic altered zone, 320; *Moravia*, structural history of crystalline bodies, 62; *New Zealand*, Se in, 39; *Quebec*, 228; *Skye*, zoned, comp., 60; *Yakutia*, as xenoliths in kimberlite, 145; Pt group metals in, 112

Ultramafic rocks, book, 227; Cl, F in, 200; cumulates, 227; experimental deformation, 228; flow differentiation in sills, 152; in alpine intrusive complexes, 228; metamorphism, metasomatism, 228; Mn, Cr, Ti, Ni in co-existing minerals, 114; origin of nodules, 228; stable isotopes in, 228; trace elements in, 228; zoned complexes, 227; *Indian Ocean*, 321; *Japan*, 228; *Maymehka-Kory*, alkalis in, 233; *Mongolia*, 320; *Richtersveld*, 235; *Russia*, rare-earth in, 197; *Sudetes*, 63; *United States*, alpine-type, 228

Ulvöspinel, solid solution with magnetite, 284

Umagite, structure, 181

Underclay, *Wales*, of coalfield, 264

Uniaxial crystals, longitudinal & transverse constants, 251

UNION OF SOVIET SOCIALIST REPUBLICS, age of archaeological sites, 3; berberite, 128; cinnabar, 333; columbite pegmatites, Nb, Ta in muscovite, 35; desert soils, 173; kimberlites, 228; ludwigite-vonsenite minerals, 128; new mineral in pyrite ore, 225; Ta, Nb in granitoid micas, 49; oil reservoirs, 189; trace elements in cassiterite ore, 291; palaeotemperatures of Cretaceous, 206; samarskite, 198; *Adrasman*, *Kuramin range*, benjamite, 225; *Aral Sea*, age of waters, sediments, 169; *Azov*, U isotopes in water, sediments, 296; *Black Sea*, basin crust, 253, crustal structures, 145, trace elements in water, 40; U isotopes in water, sediments, 296; *Caspian plain*, pyroclastic rocks, 321, Rb in subsurface waters, 296, Sr in waters, salt lakes, 297; *Caspian Sea*, Rb in waters, 296; *East Kunyeng*, *Tien-Shan*, Be in granitoids, 199; *Gissars*, *Tien-Shan*, fluorite veins in granite, 156; *Kugit-*

Lyal mine, Pamirs, white clinohumite (pamirite), 44; *Maydantal, Tien-Shan*, gases & formation of quartz, 205; *Soviet Central Asia*, Ga, In in Pb-Zn ores, 33, radioactivity of sands, 293, trace elements in Pb-Zn ores, 184; *Susamyr, Tien-Shan*, Be in granitoids, 199; *Terskey, Tien-Shan*, Be in granitoids, 199; *Tien-Shan*, B in Palaeozoic rocks, 39, Mo in sedimentary rocks, 202, ore-deposits & faulting, 275, V-rich metashashes, 97; *Turkestan-Alaizik, Tien-Shan*, tienite, 226; *Ust'-Urt*, hydrogen in natural gas, 297

— — — v. also *Armenian SSR*; *Azerbaijan SSR*; *Georgian SSR*; *Kazakh SSR*; *Kirgizian SSR*; *Russian SFSR*; *Tadzhik SSR*; *Turkmenian SSR*; *Ukrainian SSR*; *Uzbek SSR*

UNITED STATES, clinoptilolite, 53; columbite pegmatites, Nb, Ta in muscovite, 35; diamonds in drift, 164; F in ground-waters, 207; granite batholiths, 315; liquid inclusions in fluorites, 144; magnetic spherules from sands, 153; mineral belts, 272; Palaeozoic carbonate microfacies, 88; phosphorite on coastal plain 23; Pliocene geomagnetic polarity epochs, 337; trace elements in water, 204; volcanism, ignimbrites, 326; *Appalachians*, sulphide ores, 19; *Great Basin*, quartzite, late Precambrian rocks, 74; *Gulf of Mexico*, crustal section, 253, trace-elements in near-shore cores, 202; *Mississippi river valley*, calcite in Pb-Zn ores, 21, U, Th, Ra in water sediments, 297; *New England*, biotites, 48, pollucite, 95

— — v. also entries for individual states
Upper Hunter valley, New South Wales v. Australia

*Upper Kama v. Russian SFSR**Upper mantle v. Earth's crust**Upper Rhine valley v. Germany**Ural v. Russian SFSR*

Uranates, synthesis, 191

Uraninite, developed from gel, 20; in thucholite, 186; *Karelia*, age from Kr, Xe, 3, Ar isotopes in, 41, rare-earths in, 198; *South Africa*, in gold-bearing reefs, 186

Uranium, determination, 6, 170, 171; equilibrium with sulphides, 190; extracted from monazite, 189; in atmospheric aerosols, 42; in chondrites, 43; in fluorites, 56; in granitic rocks, 35; in international standards, 290; in meteorites, 122; in micas, 218; in minerals, 299; in potassium alkaline rocks, 36; in progressive metamorphism & ultrametamorphism, 296; in zircons, 132; leached from magmatic rocks, 297; secondary in coal, 38; *Aar*, in granite, 293; *Aldan*, in regional rock metamorphism, 40; *Alps*, in gneiss, 18; *Aralai*, in granitoid rocks, 36; *Arizona*, in altered Cu ores, 98; *Australia*, in zircons, 303; *Black & Mediterranean Seas*, in sediments, 201; *Orenburg*, in sedimentary rocks, 37; *Portugal*, in Miocene cyclothem, 36; *Quebec*, in shield rocks, 115; *Soviet Central Asia*, in sands, 293; *Switzerland*, in ore-bearing shatter zones, 185; *Wallis*, in schists, 185

— compounds: calcination of oxide with niobium oxide, 26; structure of $UFeO_4$, 16; transitions in U_4O_9 , 16

— isotopes, in muscovite, 256; in river waters, sediments, 297; in sea-water, coral, 118; *Aral Sea*, 169; *Black Sea*, in waters, sediments, 296; *Colorado*, in sandstone, 294; *Tiberias*, in chalk, 257

— minerals, age-determination, 167; glossary, 145; rare-earths in, 198; *Bavaria*, 77;

Black Forest, 77; *Gotthard*, in pegmatite, 185; *Hessen*, 77; *Rwanda & Congo*, in pegmatite, 322

— ores, autoradiography, 260; deposition from solution, 204; types of roll structures, 272; *Aar*, in gneiss, 185, 247; *Alentejo*, 101; *Argentina*, 273; *Colorado*, 100, 101; *Limousin*, age, 273; *Mesek mts.*, 272; *Portugal*, 101; *Senhora das Fontes*, 101; *South Africa*, 277; *Turkey*, 273; *Utah*, 272

Uranogummite, Congo & Rwanda, comp., 322; *Uranopilit*, *Turkey*, 273

Uranotile, synthesis, 191; *Limousin*, X-ray, 273

*Urdele v. Romania**Urkut v. Hungary**Ureyite* = cosmochlore, 305*Urrite, Khibiny*, mineral associations, comp., 234*Uruguay, La Paz, Canelones*, paragenesis of orthoclase, 66*Urungwe v. Rhodesia**Urup v. Russian SFSR**Urup island, Soviet Far East v. Russian SFSR**Urushien v. Russian SFSR**Uryup river, Siberia v. Russian SFSR**Ushkatyn v. Kazakh SSR**Ust'-Urt v. USSR*

Utagh, age, origin of Cu ore, 113; metamorphosed subgreywackes, 155; mica peridotite, wyomingite, lamproite, 330; organic matter in Green River shale, 38; *Bingham canyon*, Pb isotopes in galena, 168; *Emery Co.*, geology, ores, 272; *Gold hill*, austinite, 144; *Mountain Lake mine*, *Salt Lake Co.*, xanthophyllite, 79

*Utsugisoma, Honshu v. Japan**Uvarovite, Bushveld*, comp., 245

Uzbek SSR, Alambek, H in natural gas, 297; *Almalik*, pyrrhotite in anhydrite veins, 99; *Bukhara-Khiva*, Ar in ground-waters, 205; *Karamazar*, In, Ti in ores, 199; *Koitash*, wollastonite rock, 9; *Shor-Su (Shorsu)*, native sulphur, 139, 249

*Vadambal v. India**Val Boschetto v. Switzerland**Valcheta v. Argentina**Val di Noto, Sicily v. Italy**Val D'or, Quebec v. Canada**Valejas v. Portugal**Vale of Neath, Glamorganshire v. Wales**Valle de Aran v. France**Vallerite*, phase relations, 106; rotation properties, 145*Valuevite, 137**Vanadinite-svabite series*, 144

Vanadium, determination, 4, 85, 86, 171, 301; in meteorites, 207; in meteorites, sulphide nodules, 301; *Andhra Pradesh*, extraction from Fe ore, 103; *Black & Mediterranean Seas*, in sediments, 201; *France*, in, volcanic rocks, 230; *Lower Tunguska*, in trap rocks, 234; *Tatras*, in graphite-sericite schists, 39; *Vienna basin*, in waters, 296

— compounds: phase transitions in oxides, 190

Vanda lake v. Antarctica

Vandendreischeite, Limousin, age, X-ray, 273

Van Nostrand's catalog, 262*Varennes v. France*

Variation diagrams, calculation, 258; petrographic associations, 87

Various topics, 79, 164, 253, 338

Varlamoffite, identification, 141; *Malaya*, reflectivity, X-ray, 141
Värmland v. Sweden
Varved sediments, California, 71
Västervik v. Sweden
Vaterite, water in, 224; *Israel*, 245
Vauquelinite, structure, 94
Vébre v. France
Vegårshei-Gjerstad v. Norway
Velay v. France
Velence hills v. Hungary
Vendée v. France
Venetia v. Italy
VENEZUELA, *Cordillera de la Costa*, albitic gneisses, 75; *Imataca*, age of granite, 255; *Lara*, white clays, 175; *Puerto Cabello*, eclogites, amphibolites, 249; *Sotto Necuima*, *Sierra de Imataca*, charnockites, 333
Venoge valley v. Switzerland
Venterdorp, Transvaal v. South Africa
Véranne v. France
Verkhoyansk, Siberia v. Russian SFSR
Vermiculite, alkyl ammonium complexes, 269; cooling coefficient, 263; formed from phlogopite, 263; weathered, deferration, 262; *India*, heat treatment, 90; *Japan*, IR absorption, 90; *Pyrenees*, in lacustrine deposits, 92
—, Mg-, *Moravia*, 137, opt., X-ray, d.t.a., 11
—, biotite, transformation, 111
—, group, effects of heating, 90; *Japan*, X-ray, 90
Vermilhas v. Portugal
VERMONT, *Grand Isle*, age of lamprophyre, 256; *Lowell*, heazlewoodite, 79; *Roxbury*, serpentinites, 227
Vest-Agder v. Norway
Vestfjella v. Antarctica
Vesuvianite (idocrase), *Bushveld*, comp., 245; *Lower Silesia*, in alteration zone, 320; *Morocco*, Be in, 277
Vesuvianitefels, Bushveld, xenoliths, 245
Vesuvius v. Italy
Věžná v. Czechoslovakia
Vicenza v. Italy
VIETNAM, *Muong Nuong*, tektites, 214
View Hill, South Island v. New Zealand
Villiamaite, *Khibiny*, inclusions in minerals, 63
Viola valley v. Italy
Vizcaya v. Italy
VIRGINIA, age of nepheline syenite, 256; clay & related materials, 93; mineral localities, 79; *Amelia*, albite, 282; *Amelia Co.*, fergusonite, 106; *Amherst Co.*, fergusonite, 106; *Baker Co.*, *Prince Edward Co.*, kyanite, 23; *Bedford Co.*, fergusonite, 106; *Blue Ridge mts.*, quartz, 163; *Charlottesville*, lithiophorite, 141; *Laurel Fork*, *Carroll Co.*, amethyst, quartz, 163; *Leesburg*, *Loudoun Co.*, rocks, minerals, 151; *Pittsylvania Co.*, riebeckite, 79; *Willis mt.*, kyanite, 23
Viridine, *Belgium*, anal., opt., X-ray, 216, 303; *Netherlands*, opt., X-ray, 303
Vishnevye mts. v. Russian SFSR
Vishterisa v. Bulgaria
Vistula river v. Poland
Vitim-Patom, Siberia v. Russian SFSR
Vitrophyric texture, 316
Vivianite, *Niigata*, comp., 163; *Ukraine*, comp., opt., X-ray, d.t.a., IR, 313
Vogelsberg v. Germany
Volcanic arcs, Japan, 64
Volcanic ash, Iceland, comp., 153; *Puy-de-Dôme*, 317
Volcanic ash soil, 264, 265, 327; *Chile*, 265; *Japan*, 264; *Philippines*, 265
Volcanic caldera, Mauritania, 321

Volcanic cauldron, Queensland, 152, 323
Volcanic gas, Stromboli, anal., 239
Volcanic glass, leaching, 110
Volcanic magmas, Pb isotopes in, 255
Volcanic (extrusive) rocks, accessory minerals, 228; criteria, 316; criteria for depth of formation, 315; estimation of clinopyroxene, orthopyroxene, 83; K isotopes in, 34; Sr isotopes in, 292; *Aeolian islands*, origin, 325; *Antarctica*, 323; *Apennines*, 325; *Ardnamurchan*, 147; *Armenia*, comagnetism & metallogenetic specialization, 7; *Auvergne*, with coliths, 328; *Belledonne*, 149; *Cape Verde islands*, 61; *Ciscaucasia*, effect on ground-waters, 205; *Colorado*, 323, caldera sequence, comp., 69; *France*, Carboniferous, 318, Cu, Ni, Cr, Co, V in, 230, pumice nappes, 317; *Gesgapegiag*, comp. of pyroxenes, 320; *Halle*, comp., 233; *Kaiserstuhl*, tephrite, nephelinite, phonolite, 62; *Kamchatka*, 153, associations, 320; *Karelia*, Proterozoic complex, 321; *Karkaralinsk*, accessory apatite, 7; *Kunashir island*, with pyrite ores, 99; *Montiferro*, phonolitic, 62; *Netherlands*, glassy, 326; *Nevada*, with coexisting orthoclase, microcline, 65; *New Mexico*, age, magnetism, 168, comp., 168; *New Zealand*, origin, comp., Sr isotopes, 325; *Oslo*, origin, 325; *Pacific*, genesis, 325, rare elements in, 35; *Polynesia*, age, 255; *Prince Edward & Marion islands*, 236; *Queensland*, tuff sheets, 323; *Romania*, alpine, 319, hydrothermal alteration, 72; *Serbia*, comp., 319; *Sierra Nevada*, Cenozoic, 65; *S.W. Africa*, 235; *Tasmania*, thermal metamorphism, 72; *Thunder Bay*, metamorphosed, 159
Volcanic spherules, density, 215
Volcanism, influence upon sedimentation, book, 6; related to massive pyrite ores, 17; ring-structures on Moon, 69; *Aeolian islands*, time-sequence, 326; *Ahaggar*, Precambrian, 321; *Antarctica*, recent, 69; *Bohemian massif*, 332; *Canaries*, 230; *Canaries & Azores*, 153; *Elbląg*, Devonian, 329; *Halle*, Permo-Carboniferous, 233; *Hesse*, flow fabrics, 324; *Hungary*, 319; *Iceland*, differentiation of magma, 326, interglacial basaltic volcanoes, 69; *New South Wales*, alkaline, 64; *New Zealand*, source of ash beds, 327; *Pacific*, deep-sea, 87; *Puy-de-Dôme*, minerals, age, 317; *St. Helena*, age, 168
Volcanites, mode & comp., 315
Volcanoes, catalogue, chemistry, 239; *Arabia*, magnetism, 337; *Bezymyannyy*, agglomerate flow, 153; *Graciosa, Azores*, 326; *Irazú, Costa Rica*, 240; *Kilauea*, 327; *Ramnes*, *Oslo*, 317; *Surtsey*, 239, 326; *Taal, Philippines*, 239; *Thingmuli, Iceland*, 311
Volcanoclastic rocks, Canary islands, 63
Volga v. Iowa
Volga v. Russian SFSR
Volgovod v. Russian SFSR
Volyn v. Ukrainian SSR
Volkonskoite, *Israel*, 245; *Italy*, anal., opt., X-ray, d.t.a., 11
Volodar' v. Ukrainian SSR
Voltaite, *Ukraine*, 162
Voltzite, discredited, 57; *New Jersey*, = mixture, 57
Vonsenite, 128
Vorau v. Austria
Vorkuta v. Russian SFSR
Voronezh v. Russian SFSR
Vosges v. France
Vrbaité, *Allchar*, anal., X-ray, 57
Vredenburgite, *Japan & Madras*, X-ray, 55

Vulture mt. v. Italy
Vuoriyarei v. Russian SFSR

W-1, Al, Fe in, 85; Au, Ir, Pt in, 43; comp., 290; Cr in, 171; decomposition by HF, 43; In in, 260; Mg in, 5; Mn in, 172; P in, 172; Sb in, 259; Sc in, 86; trace elements in, 87; V in, 85; X-ray fluorescence analysis, 5
Wabar v. Arabia
Wadroze Wielkie v. Poland
Waigeo, New Guinea v. East Indies
Waikato, North Island v. New Zealand
Wajula v. India
Walbrzych v. Poland
Waldeck v. Germany
Waldheimat v. Austria
Waldshut v. Germany
WALES, age of slates, 2; minerals in Keuper Marl, 13
—, *CAERNARVONSHIRE*, *Benallt* mine, gano-phyllite, bannisterite, 314
—, *CARDIGANSHIRE*, *Banc-y-Warren*, age of mud, 1
—, *DENBIGHSHIRE*, *Minera*, ore minerals, 162
—, *GLAMORGANSHIRE*, *Vale of Neath*, under-clays of coalfield, 264
Wally, New South Wales v. Australia
Wallisite, Lengenbach, anal., X-ray, 126
Wallowa mts. v. Oregon
Wall-rock alteration, India, around hydro-thermal ores, 19
Walstromite, structure, 178
WASHINGTON, age of basalt, floras, 1; alpine ultramafic rocks, 228; basalt flows, sediments, metamorphic minerals, 67; Pb isotopes in igneous rocks, 34; *Aeneas, Ferry Co.*, igneous, metamorphic rocks, 151; *Olympus mt.*, metamorphosed wacke-shale, 333; *Puffer Butte, Asotin Co.*, titanomagnetites, 223; *Republic, Ferry Co.*, Au-Ag ores, igneous rocks, 151; *Sultan basin, Snohomish Co.*, muscovite, 268; *Twin Sisters*, dunite, 228; *Wenatchee ridge, Cascades*, metamorphic rocks, 65
Water, equilibrium diagram, 290
Water reservoirs, migration of Co, 205
Waters, deuterium in, 40; in contact with feldspathic rocks, 205; interstitial in marine sediments, 204; Li, Rb, Cs in, 119; *Alps*, deuterium in, 40; *Antarctica*, Sr in, 296; *Arctic Ocean*, interstitial in sediments, 204; *Azerbaijan*, oilfields, B in, 41; *Black Sea*, trace elements during evaporation, 40; *Caspian*, Rb in, 296; *Caspian plain*, Sr in, 297; *Caucasus*, metamorphosed, 297; *Ciscaucasia*, S isotopes in sulphates, sulphides, 41; *Dagestan*, I, Br, B, NH₄ in, 205; *Germany*, S isotopes in, 297; *Israel*, sulphur cycle, 297; *Issyk-kul lake*, comp., 204; *Vesuvius*, origin, 41; *Vienna basin*, geochemistry, 296; *West Virginia*, from coal mines, 297; *Yakutia*, Fe, Si, organic C in, 40; *Yellowstone Park*, comp., 296
—, ground, from oil-fields, Ar in, 205; geochemistry of Be, 40; in igneous rocks, 87; nitrate in, 207; Rb in, 205; U in, 297; *Ciscaucasia*, influence of volcanic rocks, 204; *Dead Sea*, chlorides in, 118; *England*, in Carboniferous Limestone, 119; *Kola*, near intrusive massifs, 119; *Siberia*, Th, U, Ra, Io in, 38; *Ukraine*, Sr in, 119; *United States*, F in, 207
—, mineral, Fe equilibrium in, 119
—, lake, *Connecticut*, sulphur cycle in, 118
—, river, Ag, Sb, Cr, Co, Rb, Cs, Se, Mo in, 204; U, Th, Ra isotopes in, 297; *Cambodia*, Fe, SiO₂ in, 119

aters, (cont'd.)
 - thermal, *Bulgaria*, Rb, Cs in, 119;
Pauzhetka, secondary mineralization, 157;
Rotorua, comp., 41; *Vesuvius*, origin, 41;
 v. also thermal springs
 - subsurface, chemical composition, 195
 - underground, Fe, Mn in, 41
 - avellite, structure, 181
eardale, *Durham v. England*
 - feathering, experimental, of feldspar, 30;
 of biotite granite, 264; *Belgium*, of shales, 174; *Khibiny*, 92; *Kola*, of rinkolite, 222; *Maryland*, of quartz monzonite, 12; *Massif Central*, crusts on muscovite granite, 328; *New Hampshire*, of silicate minerals, 174; *Sweden*, of basalt, 230
eaver mt. v. Antarctica
ehrlite, spinel, *Japan*, in basalt, 322
eilburgite, *Lahn basin*, 68
einsberg v. Austria
einschenkite, *Urals*, anal., X-ray, d.t.a., 144
eliteite, *Långban*, comp., opt., X-ray, 127
énatche ridge v. Washington
ernerian theory of Earth, 314
erra v. Germany
esterly v. Rhode Island
estern Australia v. Australia
est Hartlepool, Durham v. England
est Humboldt range v. Nevada
est INDIES, Bahamas, Ra in plankton, sea-water, 41; *Barbados*, age of coral, 166, airborne cosmic dust, 42; *Cuba*, age of archaeological sites, 3; *Dominican Republic*, volcanic orthopyroxenes, 267; *Jamaica*, bauxites, 281; *Lesser Antilles*, Sr in volcanic rocks, 292; *Nicarao, Cuba*, laterite transition zone, 295; *Trinidad lake*, *Trinidad*, hydrocarbons from asphalt, 38
est Kimberley, Western Australia v. Australia
est Sayan, Siberia v. Russian SFSR
est Siberian plain, Siberia v. Russian SFSR
est Thornton v. New Hampshire
est VIRGINIA, water from coal mines, 297
Wharton basin v. Indian Ocean
White Pine v. Michigan
Whitlockite, piezo-electric activity, 77
Wichita mts. v. Oklahoma
Wichmanite, *Långban*, comp., X-ray, 127
Willemite, reflectance spectrum, 58; synthesis, phase transition, 109
Willis mt. v. Virginia
Wind River mts. v. Wyoming
Witherite, identification, 259; IR absorption, 225
Wittenoom gorge, Western Australia v. Australia
Wittichenite, 79; *Algeria*, 18
Witwatersrand, Transvaal v. South Africa
Wodginite, 192; *Finland*, anal., X-ray, 127
Wolf Creek, Western Australia v. Australia
Wolframite, chlorination, 103; comp., opt., X-ray, 312; *Banat*, X-ray, 245; *Transbaikal*, Ta, Nb in, 224
 - cassiterite ore, 97
Wollastonite, manganeseiferous, anal., opt., d.t.a., t.g.a., 47; *British Columbia*, stability, 282; *Panchmahal*, stellate, opt., 47; *Quebec*, comp., opt., 46; *Sweden*, in carbonatite rocks, 145
 - rock, *Koitash*, 9
Wood, fossil, Holstein, with apatite, 337;
 - Morocco, silicified, 164
Woodstock v. Maryland
WYOMING, analcite in tuffs, 309; isotopic geochronology, 261; sedimentary rocks, 69; U ore rolls, 272; *Leucite hills*, priderite, 223; *Paint Pot hill, Yellowstone Park*, 111
 - rock alteration by hot springs, 296;
Powder basin, U in sandstone, 294; *Trout peak, Absaroka mts.*, trachyandesite, 323; *Wind River mts.*, Precambrian greywackes, 115
Wyomingite, *Utah*, 330

Xanthoconite, rotation properties, 145
Xanthophyllite, 137; structure, 95; *Utah*, 79
Xenoliths, granitic in basic dykes, 219; granitized, K isotopes in, 118; *Aar*, orientated in granite, 237; *Quebec*, sedimentary, with kalsilite, diopside, melilite, 138; *Queensland*, aluminous in basic rocks, 64; *Transkei*, in dyke, comp., 235; *Transvaal*, fenitized in diorites, theralites, 238
Xenon, from irradiated barium, 300; in meteorites, 208, 213, 300; *Karelia*, isotopes in uraninite, 3
Xenotime, *Bulgaria*, in pegmatite, 273
X-ray emission analysis, 86
X-ray fluorescence analysis, 79, 172; of heavy elements in light matrix, 5; techniques, 259
X-rays, accuracy of d-spacings measurement, 4; analysis of aggregates, 169; automatic changer for diffractometer, 258; cell parameters, densities of minerals, 145; cine-diffractometry, 169; computer programme for refining cell parameters, 84; diffraction by orientated powder specimens, 84; effect of particle size on absorption, 257; granulometry & porosity of solids, 169; lattice constants from non-indexed powder diagrams, 265; lattice dimensions with Polaroid-Land cassette, 169; mass absorption coefficients by Compton scattering, 86; micro-thermostat for goniometer, 258; off-centred crystal in double oscillation photographs, 169; powder photographs of complex superlattices, 4; single-crystal structural goniometer, 169; solution of disorder problems, 177; spot-size variation in Weissenberg photographs, 258; study of foreign elements in minerals, 4; technique for mounting powder for diffractometry, 84; uneven surface on perfect crystal, 258; unit-cell dimensions from inclined Weissenberg photographs, 265; *Belgium*, use in correlation of heavy mineral fractions, 327

Yakutia, Siberia v. Russian SFSR
Yanahara mine, Honshu v. Japan
Yana river, Siberia v. Russian SFSR
Yaroslavl v. Russian SFSR
Yatani mine, Honshu v. Japan
Yayla-Yarpuz v. Turkey
Yelete v. Uganda
Yellandlapad v. India
Yellowknife, Northwest Territories v. Canada
Yena v. Russian SFSR
Yenefrito v. Spain
Yenisey = Enisei
Yenlinkuwan v. China
Yeravna = Eravna
Yeti-Eglab v. Algeria
Yonggok mine v. Korea
Yonoyama mine, Shikoku v. Japan
Yooroonah, New South Wales v. Australia
Yorkshire v. England
Yosemite valley v. California
Yoshimi hill, Honshu v. Japan
Youngyang v. Korea
Ytterbium, in igneous & sedimentary rocks, 111
 - compounds: orthosilicate, 7
Ytteröy v. Norway
Yttrium, *Caucasus*, in acid intrusions, 7
 - compounds: polymorph of tantalate, 105; silicates of garnet- & thalénite-type, 8
Ytrotantalite, *Bulgaria*, in pegmatite, 273
Ytrotitanite, *Ishikawa*, anal., 132; *Korea*, anal., 132
Ytrotungstate, anal., opt., X-ray, 225
Yudaira, Honshu v. Japan
Yugawaralite, structure, 269
YUGOSLAVIA, *Borak, Dalmatia*, fossiliferous bauxites, 175; *Bosnia*, altered porphyrite-keratophyre, 158, 232; *Idrija*, Hg in geochemical prospecting, 119; *Kopaonik, Serbia*, granodiorite pluton, 232; *Marici, Dalmatia*, marine fossils in bauxite, 175; *Raduša mine*, lizardite, 268; *Starigrad*, galena, 334; *Timok, Serbia*, volcanic rocks, granitic rocks, 319

Zamanti v. Turkey
Zambesi river v. Mozambique
ZAMBIA (NORTHERN RHODESIA), Co in pyrite, 187; S isotopes in sulphide ores, 187; *Kalengwa*, Cu ores, 274; *Lusaka*, scapolite, 220; *Mpande*, granite, metamorphic rocks, gneiss dome, 63; *Njoka, Lundazi, Zambia*, graphite, 282; *Refunsa*, orthoclase, phlogopite in carbonatites, 30
Zareba Góra v. Poland
Zawar v. India
Zeolite minerals, symposium, 7; *Argentina*, opt., X-ray, d.t.a., 52; *Gan'ma*, in altered tuff, 139; *Japan*, X-ray, 338; *Nova Scotia*, from basalts, 52; *Oregon*, in granitic rocks, 236
Zeolites, 5A, structure, 179; dehydration, 8; Na-type A, structure, 269
Zermatt v. Switzerland
Ziar v. Czechoslovakia
Ziegenrück v. Germany
Zinc, determination, 86, 259; *Colorado*, geochemical anomaly, 271; *Georgian SSR*, in altered magmatic rocks, 200
Zinc blende v. sphalerite
 - compounds: elastic constants of sulphide, 75; new sulphide polytypes, 181; properties of (Cd, Zn)S mixed crystals, 251; substitution in orthotitanate, 180; synthesis, phase transition of $ZnSiO_4$, 109; synthesis, X-ray of $ZnSiO_3$, 109
Zincite, optical absorption, 311
Zinc minerals: *New Brunswick*, basic carbonate, anal., X-ray, d.t.a., IR, 128
Zinc ores, *Carpathians*, 274; *Ebor*, 276; *Illinois*, 244; *Missouri, Kansas, & Oklahoma*, Zn-Pb ores in altered limestone, 21; *Norway*, 98; *Silesia*, trace elements in, 290; *Tennessee*, 184, in dolomite, limestone, 98; *Yukon*, 98
Zinckenite, *Slovakia*, 101
Zircon, accessory in granitoids, inclusions, comp., 45; age-determination, 261; effect of impurities on synthesis, 28; free energy of formation, 24; from pegmatites, morphology, 45; metatitite, 28; Pb isotopes in, 87; stability, 28; synthesis, 105; U, Th in, 132; *Antarctica*, age, 1; *Australia*, radioactivity, 303; *Azov, Ga* in, 200; *Bavaria*, in granodioritic rocks, gneisses, 68; *Brazil*, age, 166; *Congo & Rwanda*, comp., 322; *Dnieper*, rare-earths in, 198; *Dominion Reef*, authigenic alteration, 215; *England*, in schists, slates, 241; *Harz*, in slates, origin, 328; *Kyoto*, anal., 132; *Minas Gerais*, age, 167; *New Zealand*, age, 256; *Norway*, age, 166; *Pyrenees*, from granite, gneiss, 303, in metamorphic &

Zircon, (contd.)

intrusive rocks, 315; *Rhodopes*, in pegmatite, 144; *Sahara*, age, 81; *South Africa*, age, 165

Zirconium, determination, 86, 171, 198; in artificial magmas, 286; *Africa*, in basalts,

148; *Marlsburg*, in granite pluton, 114; *Ulkan*, in subalkaline massif, 200
— compounds: synthesis of oxide, 105; synthetic garnets, 29
Zirfesite, from weathered eudialyte, 116
Zoisite, polytypic with clinozoisite, 32;

Lower Silesia, in alteration zone, 320
Tanzania, opt., 196
Zulova v. Czechoslovakia
Zussmanite, Mössbauer effect, 177
Zvyagintsevite, *Noril'sk*, comp., X-ray, 22
Zwickau v. Germany

READER'S ADDITIONAL ENTRIES

--	--	--

READER'S ADDITIONAL ENTRIES

READER'S ADDITIONAL ENTRIES

--	--	--

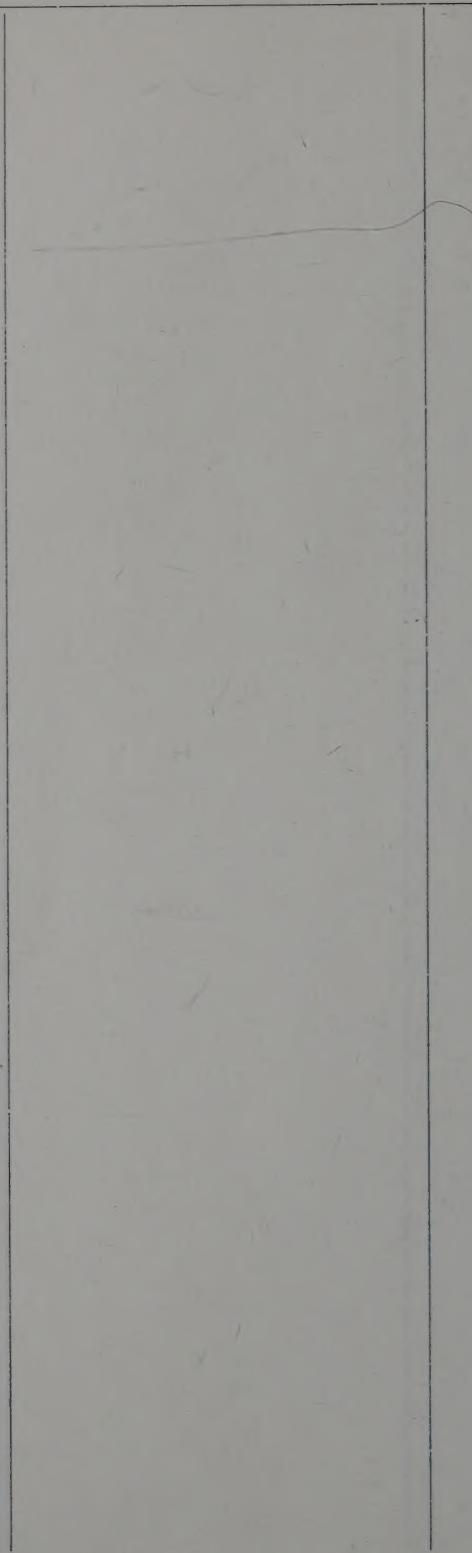
READER'S ADDITIONAL ENTRIES

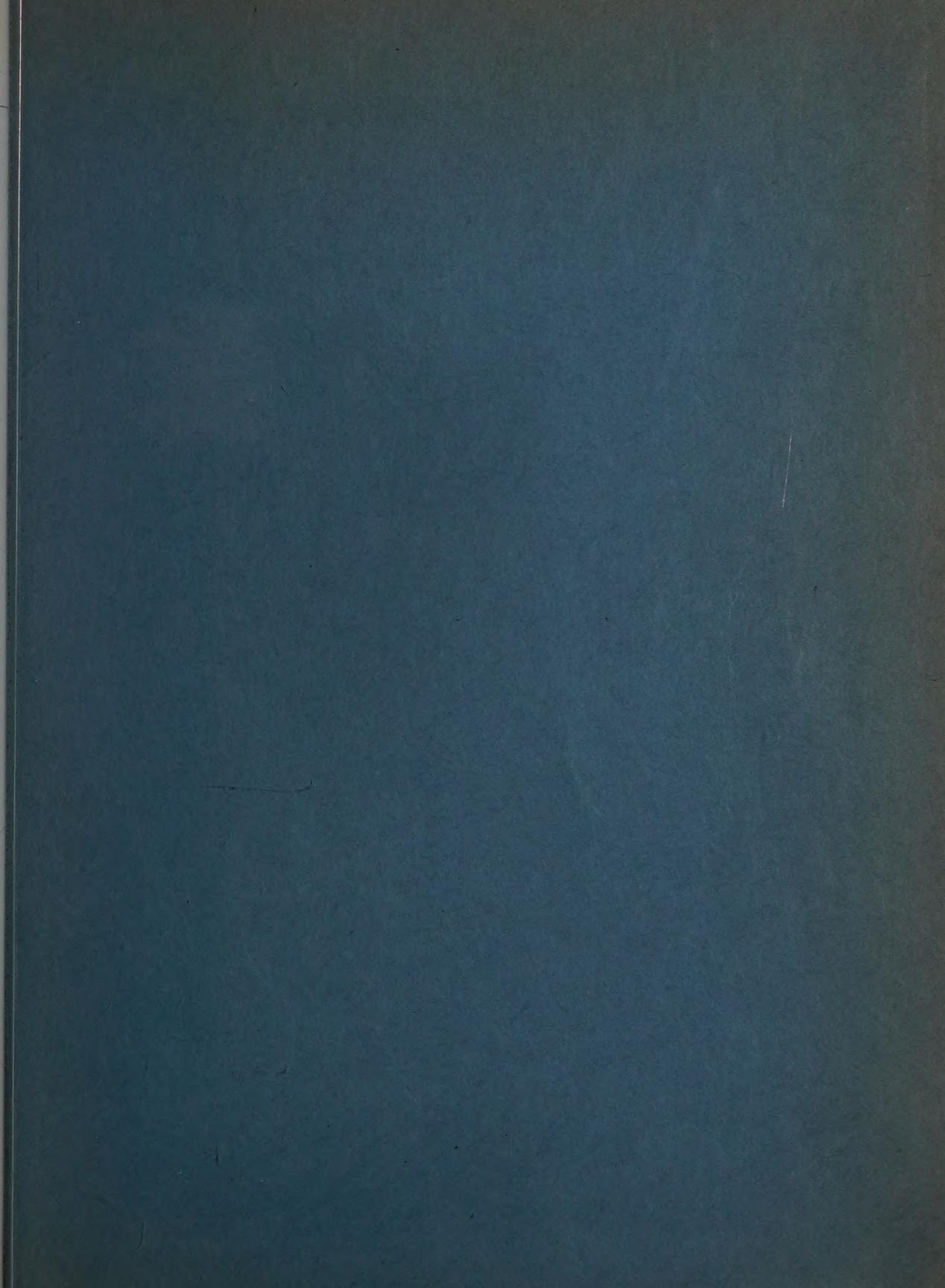
--	--	--

READER'S ADDITIONAL ENTRIES

--	--	--

READER'S ADDITIONAL ENTRIES





U. of ILL. LIBRARY

AUG 22 1969

CHICAGO CIRCLE

Mineralogical Abstracts

The Mineralogical Society of Great Britain and the Mineralogical Society of America are the joint publishers. The periodical can be obtained directly from the Publications Manager, Mineralogical Society, 41 Queen's Gate, London, S.W.7, or through any bookseller.

Annual Subscription for one calendar year of four issues and Index number, post free : U.S. \$18 or £7 7s.

Back Numbers : volumes 1-13 of *Mineralogical Abstracts* were issued only with the *Mineralogical Magazine* (volumes 19-31) and are not available separately. With the exception of a few which are out of print, back numbers of the *Magazine* containing *Abstracts* are available at U.S. \$4.50 or £1 15s. per number.